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THE
EDINBURGH
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Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*On the New Method of Inducing Premature Labour at a Pre-determined Hour.* By ROBERT BARNES, M.D. Lond., Fellow of the Royal College of Physicians of England, Physician to the Royal Maternity Charity, Lecturer on Midwifery at St Thomas's Hospital, Honorary Fellow of the Obstetrical Society of Dublin, etc.

IN the last volume of the "Obstetrical Transactions," I described a method of inducing premature labour, and of accelerating labour, which, it appears to me, possesses several important advantages over those in ordinary use.¹ That the end may be accomplished by several different proceedings, employed either singly or in combination, is indeed true. But, howsoever satisfied some may be with the operations of puncturing the membranes; of dilating, or attempting to dilate, the cervix uteri with sponge-plugs; of separating the membranes from the uterine wall; of injecting water into the vagina or uterus; of administering ergot; it must needs be admitted, that these and other methods are extremely uncertain as to the time they take to effect the object in view. This uncertainty as to time is in itself a serious objection. It entails other objections. Throughout the undefined hours and days during which the obstetrice is seeking to provoke the uterus to expel its contents, the expectant

¹ In a paper on the Induction of Premature Labour, published in the last volume of the "Obstetrical Transactions," the author has given an historical survey of the various operations that have been resorted to. He has there endeavoured to assign to the proper sources the merit attaching to each method; and has traced, to the best of his information, the successive modifications and applications of the caoutchouc bag, down to the form and use adapted by himself to the induction and acceleration of labour.

mother is tortured by suspense, and depressed by fear. Her strength, moral and physical, is sorely tried. And when, at last, at some unforeseen moment, active labour sets in, the medical attendant may be absent. Mother and child are thus exposed to unnecessary danger. Nor is the position of the medical attendant a desirable one. He who has commenced an operation for the induction of premature labour is, from that moment, bound by the tie of professional responsibility, and by his personal anxiety, to be at the disposal of his patient until she is delivered. He can undertake no other engagement. This absolute surrender of independent action for an indefinite time is a very serious matter, not only inconvenient to the physician, but entailing danger on his clients. From all this uncertainty, from all these inconveniences, the patient and the physician may be released by the operation I have proposed, and on several occasions successfully performed. Labour may be induced at will, and terminated, if desired, at an appointed hour, with as much precision as to time as almost any operation which the surgeon performs. By adopting this new method, it is just as feasible to make an appointment at any distance from home, to carry out, at one sitting, the induction of labour, as it is to cut for the stone. The operation is brought within the entire control of the operator. Instead of being the slave of circumstances, waiting anxiously for the response of Nature to his provocations, he is master of the position. He determines beforehand, on a survey of the requirements of the case, the time when the patient ought to be freed from the imperilling pregnancy, and may with confidence announce to her the term of her anxieties.

The method I have pursued, is by no means uniformly simple. It implies a combination of resources. But the primary and all-important point consists in the artificial dilatation of the cervix uteri by the use of specially constructed caoutchouc bags distended with water.¹ The particular steps of the operation are sufficiently described in the cases that follow. It is, however, desirable to explain the principle that governs the application of the measures successively called into use. The first condition to be fulfilled is the full dilatation of the os uteri; this may be called the preparatory stage. The second condition is the excitation of the uterus;

¹ The instrument I use is of a fiddle shape, having, when distended, a narrower cylindrical central portion, dilating at either end into a bulging or mushroom-like expansion. The object of this is to prevent the bag from slipping forward into the uterus, or backwards into the vagina. The bag is prolonged into a long narrow tube with a stop-cock at the end, to keep in the water when injected. The injecting medium is the ordinary Higginson's syringe,—an instrument which should always be carried in the obstetric trousseau, as it is useful for many other purposes. Three bags of different sizes are sufficient as a series. To facilitate the introduction of the flaccid bag into the cervix uteri, a small pouch is attached outside, to receive the end of the uterine sound, which, guided by the finger of the left hand, applied to the os uteri, serves to push the bag into the cervical canal. The instruments are well made by Messrs Weiss, Strand.

this may be called the provocative stage. The last step is the expulsion or extraction of the foetus; this is the accelerative or concluding stage. The first stage is accomplished by a preliminary dilatation of the vagina, after the manner practised by Braun of Vienna. But there is no need of a special instrument. The medium or full-sized caoutchouc dilator made for the cervix answers equally for the vagina. Then, the smallest, or the medium dilator, is introduced into the cervix, care being taken that the terminal bulging part shall pass through the os uteri internum, whilst the inferior bulging end emerges in the vagina. When water is thrown in, the dilator is thus secured by its shape *in situ*, and the eccentric pressure bears upon the whole cervical canal, and especially upon the two points of greatest resistance, the ora externum and internum. This stage ought not as a rule to occupy less than three or four hours. Dilatation is naturally a gradual process, not a violent precipitate one. When the dilatation is complete, it is obvious that the great obstacle to delivery is overcome. If expulsive pains arise, the problem is solved; for the way is clear. But, if pains do not arise, we must excite them. Some uterine contraction may be counted upon, if we draw off a portion of the liquor amnii, and compel the uterus to collapse. The most convenient stage for tapping the membranes is generally before the full dilatation of the cervix. The dilator should be replaced before the liquor amnii has wholly drained away. The retention of a portion is useful as a security to the child, and to facilitate the operation of turning, should this measure become necessary. But, notwithstanding the full dilatation of the cervix, and the rupture of the membranes, expulsive action may not arise. It may, therefore, be necessary to resort to the accelerative measures. These are: the forceps and turning. If the head presents, and the soft and hard parts admit, the long forceps should be applied without any considerable delay. If this instrument be excluded, we have a final and sure resource in turning. But it will often be essential to carry out this ultimate operation by the method of combined external and internal manipulation, which dispenses with the necessity for passing the hand through the cervix uteri, or above the brim of the pelvis, which latter may be distorted.

The cases which follow have not been reported in my memoir in the Obstetrical Transactions.

CASE 1.—*Albuminuria at seventh month of pregnancy; convulsions; labour induced by dilatation; delivery completed in two hours; recovery.*

6th November, 1861.—My assistance was requested by Dr Tidy, of Hackney, in the treatment of a case of convulsions. The patient was a young woman, the wife of a butcher, and had, till her present illness, enjoyed good health. She married in March, and was believed by her friends to be in the seventh month of her first pregnancy. Some weeks ago slight swelling, impeding the free use of her hands, was observed; but there was nothing distressing until the 3d instant. Since this date anasarca has become rapidly general and

considerable. On the 5th, having complained of blindness, she was seized with eclampsia, and remained more or less comatose. Dr Tidy bled her to ten ounces. The effect of this bleeding was very satisfactory. There were no fits after 8 A.M. of the 6th, but she lay comatose, though not always profoundly so. The bowels were freely relieved by a purge. I saw her at half-past five P.M. of the 6th. She was semi-comatose; did not answer questions; the pupils could not be observed, owing to the strength with which she clenched the eyelids when touched; pulse 100; tosses about; face, neck, and hands much swollen; face cyanosed. Urine had been freely passed in bed. Blood drawn yesterday shows a large, loose, red clot, not buffed. The os uteri was not at all open, but admitted tip of finger on pressure; it was reached with difficulty. The persistent coma, which had already lasted more than twenty-four hours without signs of remitting, determined us to deliver. The membranes were punctured with a knitting-needle; a little liquor amnii escaped; the head presented. The patient was left for two hours, to allow the uterus to contract and prepare for expansion of the cervix. At 8 P.M. we met again. A pint of urine was drawn off. The os was but slightly open; there was no indication of labour, and the patient's general condition was not more promising. I applied a caoutchouc dilator, distending it with water, in the first place, to the vagina, so as to remove all obstructive rigidity in this part of the parturient canal. The vagina was quickly expanded, giving more freedom for further manipulation, and slightly opening the os externum uteri. I then applied a dilator mounted on a flexible metallic stem inside the cavity of the cervix; by gradual distension during thirty minutes a considerable expansion had been gained; three fingers could be introduced, and feeble labour-action was excited. She was given thirty minutes more to allow this action to work. At 9 P.M. the os uteri was a little more dilated; but the pains were so feeble that there seemed no certainty of delivery being effected spontaneously for many hours. I therefore sought to deliver by bi-manual version; but owing to the great length of the cervix and of the uterus proper, which was a rigid cylinder, the absence of liquor amnii, and the tonic contraction of the uterus, I did not succeed readily. A loop of cord came down before the head; it was pulseless. The head was perforated at once, and forty minutes were spent in careful extraction by the crotchet, the bones affording but slender hold. The uterus contracted well, and cast the placenta. Chloroform was administered during the operation for the purpose of securing the quiescence of the patient.

On the 13th November, I learned that consciousness quickly returned after the delivery; the anasarca soon disappeared, and the patient did well.

The urine drawn by catheter was acid, turbid, loaded with albumen, specific gravity 1024; it contained 1.66 grains of urea in 100 grains. After standing forty-eight hours it yielded abundant crystals of uric acid, and numerous spores and strings of sugar fungus.

The interest of this case consists in the rapidity, certainty, and safety with which labour was induced and completed. Under the ordinary methods, delivery could not have been counted upon in less than twelve hours, if even so soon. Coma would have persisted, eclampsia would almost certainly have returned, and death would probably have supervened whilst delivery was being expected. By the method adopted, in two hours, security was attained for the mother, relief from anxiety by the friends, and for the medical attendants there was the pleasing consciousness of having triumphed over a formidable disease.

CASE 2.—I was called in to deliver Mrs H. of her first child, on account of convulsions complicated with contraction of the pelvis. She was in labour at term. It was necessary to perforate and deliver by the crotchet and craniotomy forceps. In her second labour I was again called in to deliver. This time she was not suffering from convulsions, but the pelvic contraction excluded delivery by any other mode than by craniotomy. In her third pregnancy, she consented to have labour brought on at seven months. This was done by a

combination of ordinary methods, such as the sponge-plug to the cervix uteri, vaginal and uterine douches, ergot, and rupture of the membranes. A living child was delivered after some difficulty, by turning. On this occasion, notwithstanding the successful issue, much time was lost, and risk of failure was incurred through the tedious uncertainty of the methods employed to bring on the labour. The operations extended over several days; and instead of being "master of the position," as I conceive the accoucheur ought to be on these occasions, I was obliged to wait upon Nature until she was sufficiently provoked by our interferences, to permit delivery to be completed.

In Mrs H.'s next pregnancy I was better prepared. On the 18th February 1861, she being then about seven months gone, I detached the membranes from the official zone; on the 19th, the intra-uterine douche was applied, and the caoutchouc bag was used to dilate the vagina. On the 21st, the intra-uterine douche was again applied, and then the elastic dilator was applied for a short time to the cervix. The os yielded somewhat, and I fixed the next day for the completion of the labour. This was effected satisfactorily, by further dilatation of the cervix by water-pressure, and by turning by combined external and internal manipulation. Mother and child again did well.

On this occasion also, notwithstanding the new power I had acquired in the caoutchouc dilator, the process had been unnecessarily tedious. I was not yet satisfied. On the 6th August 1861, Mrs H. ceased to menstruate. Calculating from this day, she would be 230 days pregnant on the 25th March 1862. When she came to me in January last, I therefore fixed that day for her delivery. Accordingly, at five P.M. on that day, I expanded the vagina by introducing the medium-sized dilator for ten minutes. This also acted a little on the os uteri, which now admitted the tips of two fingers. I then ruptured the membranes; some liquor amnii followed. I appointed to see her again at 7 P.M., and to conclude the labour. At 7 P.M. a good deal of liquor amnii had drained away; but the os was not more dilated, and there were no pains. I passed the medium-sized dilator into the cervix, and expanded it by water. The instrument was left in forty minutes. Examining at the end of this time, I found that it had slipped forward quite into the uterus, so that pressure had not been fairly exerted on the cervix. I therefore secured the dilator in its proper situation, and renewed the distension. At 10 P.M. the cervix had expanded to the size of the rim of a wine-glass. I thought this enough to admit the child, which I had resolved to deliver by turning, to pass, as the forceps could not be applied, and the uterus could not be counted upon to contract sufficiently to expel it. Passing the left hand into the vagina, with barely more than the first joints of two fingers through the cervix, I pressed steadily on the presenting head, directing it towards the left iliac fossa, and forwards, whilst the breech was pressed in the opposite direction by my right hand, applied to the fundus uteri externally. In a very few minutes the head was thus put on one side, and a foot, the right, was felt over the centre of the os. This was seized and brought down, whilst by consentaneous upward pressure upon the head, above the pubes, version was effected. The child turned out to be larger than I had anticipated from the period of the pregnancy, so that nearly twenty minutes were occupied in the careful traction of the breech through the cervix. This stage I did not hurry, as more complete expansion of the cervix was desirable, to permit the trunk and head to pass rapidly to secure the child's life. The breech being delivered, the pulsation of the cord became almost imperceptible. I then hastened the extraction of the chest; the extrication of the arms occupied two or three minutes, being impeded from narrowness of space; the head again was delayed two or three minutes, considerable traction being exerted to bring it through the pelvic brim. The child, a girl, larger than her two living children, was born apparently dead; only the faintest pulsation of the heart was felt; that in the cord was quite gone. I tied the cord, and sought to excite respiration by applying a flannel, wrung out of hot water, to the chest. Gradually faint imperfect inspiratory movements were made; the heart beat more strongly, and the cord pulsated.

The child was then removed to a hot bath, in which it was partly immersed; the water being dashed at intervals over the chest. By perseverance in this treatment, in about half-an-hour, respiration was, to my great satisfaction, fully established. The placenta caused some trouble from the narrowness of the parts. There was very little hæmorrhage. I got home at 11.15 P.M., having kept my engagement, and having expended in all not more than five or six hours in the induction and completion of labour.

This striking result could not have been attained without,—

1. The dilators to expand the cervix, and prepare the parturient canal for the passage of the child.
2. The operation of turning by the bi-manual method.

CASE 3.—*Placenta Prævia: Acceleration of Labour by Artificial Dilatation of Cervix Uteri.*

20th June 1861. Mrs C. has had thirteen labours; considers she wants five weeks of time; reckons from date of her husband's return from Australia. Taken with smart flooding yesterday morning. Flooding recurred in evening. Several practitioners were applied to: I being engaged. There was hæmorrhage again on 20th, and more or less oozing continuously. I saw her at 8 P.M. Os dilated to size of a half-crown, not yielding. Cervix, 1.5" long; inner os sharply defined; placenta quite over it, slightly detached at parts; head presenting; could not reach margin of placenta. Patient restless, but not exhausted. Hæmorrhage still. I passed my hand into the vagina, and completely detached the placenta from the lower zone, for a ring of 2" radius from the os. I was then able to reach the margin of the placenta at the left side. I perforated the membranes by a steel pen, making a free rent with my fingers. Scarcely any liquor amnii followed. No hæmorrhage. I left her to natural powers for a short time, not having my caoutchouc dilator with me. At 11 P.M. I went again; there had been a little hæmorrhage; the os was the size of a crown, not yielding; no pains. Indication to deliver: but this could not be done without violence, unless the os were previously expanded. I applied fiddle-shaped dilator, and distended it with water; it maintained its place well; in twenty minutes the cervix was more open, but not fully. I, however, thought parts fit for turning. By two fingers on head, and by the right hand applied externally to the breech, I attempted version; could only partly succeed. I felt the cord, which was without pulsation. I soon caught a knee, when I pushed up the head away from the pelvis by the palm of my right hand; the knee was brought through the os, two fingers only having been passed into the uterus. I kept the knee some twenty minutes in the cervix, completing the dilatation of this structure gradually. When the breech had passed, the trunk and head soon followed. Pressure had been kept up on the uterus, so it contracted well. I brought away the placenta without much difficulty, although some portions within the lower zone still adhered. Two cotyledons were thicker than the rest, infiltrated with blood partly coagulated; these cotyledons had covered the os. The insertion of the cord was near the edge of the placenta, and the rent was at the same spot. Child inanimate. The patient made a good recovery. In this, as in several others conducted on the same principle, rapid and safe dilatation of the cervix uteri was effected without resorting to the *accouchement forcé*.

CASE 4.—Mrs R. I undertook this case in conjunction with Dr Mason. The patient has gone through a terrible series of puerperal troubles. She has been eleven times pregnant. The following is a summary account of the first ten labours, supplied to me by Dr Mason:—1st labour, natural, in labour three days,—child dead; 2d, three days in labour, child alive; 3d and 4th, delivered by long forceps, children alive; 5th and 6th, delivered without instruments, children being small, born alive; 7th and 8th, delivered by long forceps, children alive; 9th, labour induced at eight months, by sponge-plug

in cervix, and rupturing the membranes,—labour terminated by craniotomy by Dr Waller; pyæmia, which Dr Mason ascribed to the offensive matter arising from the presence of the sponge-plug; recovered after a very severe illness; 10th, induction of labour at seven months by injection of cold water,—tedious process, labour terminated a week afterwards,—child alive. Eleventh pregnancy: Calculating that 240 days would expire, on the 16th April 1862, I appointed to meet Dr Mason at 5 P.M. on that date, to bring on and terminate premature delivery. At 5 P.M. I dilated the vagina by the water-bags, for about thirty minutes. The vagina became considerably relaxed and lubricated, and the os uteri externum had a little yielded. I next introduced the medium bag into the cervix, and distended it gently. This was left in thirty minutes. At end of this time, the cervix would admit two fingers, but there was still a tight ring. I then ruptured the membranes by a steel pen. In a few minutes a moderate quantity of liquor amnii flowed. We left her for thirty minutes, to allow of further draining, and give the uterus opportunity to contract. On our return, the os was not much more sensibly dilated, and there were no pains. The cervical dilator was again introduced, and distention was maintained till past nine, when the cervix was sufficiently dilated to admit of birth.

The general smallness of pelvis, and the previous experience of Drs Waller and Mason, rendered it inexpedient to use the forceps; and as parturient action could not be depended upon, I proceeded to turn. Two fingers were passed through the cervix to push aside the head, whilst pressure on the fundus pressed the left knee within reach. This was brought down. Great care was taken to bring the breech gradually through the pelvis, so as to ensure full dilatation of the cervix, before the shoulders and head were engaged in the brim. The extraction of the breech occupied thirty minutes at least. When this was born, the cord still pulsated, but was much compressed between the child's body and the tightly-embracing soft parts of the mother. Delivery was now accelerated; the arms were disengaged rapidly, and the head drawn through the brim. This latter stage required some little force. The child was of fair size; a girl; at first asphyxiated; heart beating feebly. I stimulated external respiratory nerves by warm water. Respiration found excitable. It was then kept in a warm bath, as high as the belly, and a flannel soaked in warm water dashed at intervals on chest. Gradually, in twenty minutes, respiration was fully established; the child cried freely. Placenta not coming readily, I had to pass my hand into the uterus to bring it down *edgewise*, as its bulk precluded its descent in the ordinary form. It was very large. For an hour after we remained with the patient. She seemed to me much depressed, as if by the shock of labour; the heart's action was enfeebled. Brandy and chlorodyne revived her. Dr M. was less anxious than I was, as he said she had always manifested the same symptoms after her labours; and the prostration was less marked now than on former occasions.

On the next day, Mrs R. was doing well. She had suffered much less than on any previous occasion. She had not undergone nearly an equal amount of physical distress, whilst her mental anxiety had been reduced from days and weeks, to a period of five hours. On the 25th April, I received a note from Dr Mason, informing me that "Mrs R. was quite well, and wonderfully pleased at the result of this confinement, a strange contrast to all previous ones."

The cases above narrated illustrate several of the most important applications of the new method of inducing and accelerating labour. The perils attending puerperal convulsions, and placenta prævia, may be almost at once terminated by this proceeding. In every case where it is an indication to dilate the cervix uteri, as for the purpose of facilitating the application of the forceps, or the operation of turning, the operation proposed offers a ready means of effecting the purpose.

A distinguishing merit of the new operation consists in the substitution of gentleness for violence. The *accouchement forcé*, held necessary at times to avert greater perils, may be altogether discarded from practice. There is no longer any excuse for the forcible dilatation of the cervix uteri by the hand,—a proceeding which may lacerate and must bruise the soft structures, and to which I have traced in many cases the origin of fatal pyæmia.

I anticipate with some confidence, that the method of inducing premature labour now described, will supersede those now commonly resorted to. If it be objected, that the proceeding or the series of proceedings recommended, constitutes an operation demanding considerable nicety of discrimination, and delicacy of execution, I would submit that these are qualities which it is not unreasonable to expect in men who undertake the responsibilities of obstetric practice.

ARTICLE II. — *On Ligature of the Common Iliac Artery, with Report of a Successful Case.* By E. R. BICKERSTETH, F.R.C.S., Liverpool.

FROM examination of a statistical report on this operation by Dr Smith of New York, published in the "American Quarterly Journal of Medical Science" of July 1860, it appears that this operation had, up to that date, been performed five times in England, four times in Scotland, once in Ireland, twice in France, twice in Russia, twice in South America, once in Germany, and fifteen times in the United States,—in all, thirty-two operations. Twenty-five of these thirty-two operations proved fatal, showing a mortality of $78\frac{1}{2}$ per cent. Only fifteen of the operations were performed for the cure of aneurism, and of these ten died, showing a death-rate of $66\frac{2}{3}$ per cent. The cause of death appears to have been, in two from hæmorrhage, in two from exhaustion, in two from gangrene and suppuration of the aneurismal sac, in one from gangrene of the leg, in one from peritonitis, in one from dysentery, and in one from erysipelas. Doubtless the operation has been more frequently resorted to than appears from this record; but, as successful operations are more commonly published than those terminating fatally, it is probable the percentage of deaths is understated. The following case having recently occurred in my practice, I am induced to record it:—

T. A., æt. 39, a strong, muscular man, by trade a boiler-maker, was admitted into the Royal Infirmary under my care on the 24th of February last. He is of sanguine temperament, of steady habits, but deaf, as nearly all boiler-makers are. Till within a few days of his admission he had worked at his trade without much inconvenience. He stated that three or four months before he had felt some uneasiness in the right side of the abdomen and in the front

of the right thigh, but that until about six weeks ago there was no perceptible enlargement to be discovered. He then found a tumour a little above the right groin, which continued to increase up to the time of his admission. He could not recall any accident or other cause for its formation.

On admission, a pulsating tumour was felt occupying the entire iliac fossa, and extending in the direction of the artery from an inch and a half below Poupart's ligament to within two inches of the umbilicus. When the patient was recumbent the tumour did not cause any perceptible fulness, except in the groin, where it was raised about an inch above the natural contour; but, on feeling through the abdominal parietes, which were very strong and muscular, the tumour was distinctly felt occupying the whole of the iliac fossa, extending laterally from the ilium to beyond the linea alba. Superiorly, owing to the thickness of the parietes, it was impossible to define its exact limits; but when the fingers were pressed deeply into the abdomen, two inches below and to the outer side of the umbilicus, the rounded upper end of the tumour was felt expanding with each pulsation, and gave the impression that the aneurismal sac extended even higher than could be felt. Pressure upon the tumour caused considerable uneasiness, without perceptibly decreasing its volume; but, from its position and shape, and from the very distinct pulsation, there could be no doubt of its being an aneurism of the external iliac artery.

For a few days the man was kept quiet in bed, directions being given that no one should examine or handle the tumour. It appeared, however, that the examination on admission had disturbed the parts; for he soon began to suffer acutely from pain down the thigh and leg, and also from pain in the tumour itself, with griping and flatulence over the abdomen generally. Opium and emollient applications afforded partial or temporary relief; but the tumour enlarged rapidly, and the abdominal pain became so severe that the patient complained greatly, and got into a restless and feverish condition. It was evident that if any operation was to be undertaken, it must not be longer delayed. From the high position of the tumour, I was convinced ligature of the external iliac would be impracticable, and that the common iliac must be tied, if, indeed, it even could be reached; for I was not without grave suspicion lest, after dividing the muscular parietes of the abdomen, I might find the sac of the aneurism extending upwards so as to involve this artery also.

The abdomen was much distended and hard from muscular contraction, depending apparently on colicky pain, from which the man now almost constantly suffered. A dose of castor-oil with laudanum was ordered, to be followed the next morning by a turpentine enema should the belly continue tense.

4th March.—The bowels having acted freely with the enema, the abdomen was fortunately much softer and less swelled. Chloro-

form was administered. I made a nearly vertical incision, five inches in length, midway between the anterior spine of the ilium and the umbilicus. One inch of the incision was above the level of the umbilicus, and the lower four inches passed in a slightly curved direction (the concavity being inwards) over the surface of the tumour. Having divided the skin and fascia to this extent, I dissected through the muscles and fascia transversalis at the lower end of the incision, and then introducing my finger as a guide, I separated and protected the peritoneum, and with a blunt-pointed curved bistoury cut through all the textures to the full extent of the external wound. Laying aside the knife, and using only the fingers of both hands, I then carefully detached the peritoneum from the upper edge of the iliac fossa, and from the top of the aneurismal sac, which I could feel pulsating strongly in the position in which I had hoped to find the common iliac artery. Having continued the separation of the peritoneum from off the upper end of the aneurism, and rather to its inner side, the forefinger of my right hand came upon the artery, which appeared to be somewhat displaced, being pushed inwards, and rather lifted up by the tumour, upon which it rested. My colleague, Mr Long, greatly assisted me at this part of the operation, by pressing aside the peritoneum and abdominal contents with one hand, while with the other he introduced the narrow end of a long flat copper spatula to the bottom of the wound and to the inner side of the artery, which was thus, with a little care and a good light, brought into view. I had now no difficulty in exposing it; and having opened the sheath with a narrow-bladed, sharp-pointed knife, I easily insinuated from within outwards an aneurism needle armed with a single silk ligature round the vessel. This was tied as tightly as possible, and all pulsation in the tumour at once ceased. No bleeding occurred during the operation, and the wound, being carefully sponged, was therefore at once closed with metallic sutures. The operation from beginning to end did not occupy more than twenty minutes. I could not satisfy myself regarding the exact spot at which the artery was tied. It appeared to be immediately beneath the umbilicus; and, as I could not feel any branch given off from it within half an inch of the spot at which I passed the ligature, I suppose it must have been very near the middle of its course, or perhaps rather nearer to the aorta. The right leg and foot were surrounded with cotton wadding and a flannel bandage, and the patient removed to bed. The subsequent progress is thus reported:—

Next day, *5th March*.—Has passed a more comfortable night, and has had less pain than for several weeks. The abdomen is flat and soft; the tumour smaller and harder, and free from pulsation. The epigastric artery is distinctly felt pulsating vigorously upon the surface of the tumour. The foot and leg warm, and of a healthy colour.

7th March.—All going on favourably. On removing the dress-

ings from the wound, a quantity of bloody fluid oozed from the incision by the side of the ligature, but at all other parts the wound has healed by the first intention.

8th March.—The escape of bloody serum from the wound continues. There is evidently also a considerable extravasation of blood in the abdominal parietes on both sides of the incision.

9th March.—Fluctuation and bulging of the abdominal walls over the crest of the ilium is felt, and arises from retention of fluid in the cavity of the wound. An incision through the skin in this situation gave vent to a large quantity of stinking decomposed blood.

10th March.—Up to this date the patient has taken from one to two grains of opium night and morning, with the object of keeping the bowels quiet, and they have not acted. The man has continued quite comfortable and free from symptoms of constitutional irritation. To-day the abdomen is somewhat uneasy, the pain arising from flatulence. Ordered an enema, and to omit the opium.

11th March.—The bowels have acted freely, and the patient is more comfortable. The wound looks well; but there is still a very profuse discharge of fetid matter from both incisions. Ordered six ounces of wine daily.

From this time all went on very satisfactorily: the discharge diminished daily. On the 6th of April, the ligature came away, and a few days afterwards the wound had entirely healed. The man was then allowed to leave his bed and walk about. As there was some tendency to hernia, evidenced by bulging of the abdominal walls at the lower end of the cicatrix, he was directed to wear a belt to support the part. He remained in the house some time longer for the treatment of a very tight and callous stricture of the urethra, anterior to the scrotum, but was at length discharged cured on the 10th May. The aneurismal tumour had then diminished to one-fourth of its original size, and still felt perfectly solid and free from fluctuation.

The most interesting pathological feature of this important case was the peculiar position of the common iliac artery, which, instead of being covered and enveloped by the sac of the aneurism, rested upon its inner and upper surface. Had it not been for this (which analogy shows to be a most unusual disposition of parts), I believe it would have been practically impossible, owing to the high position of the aneurism, to have tied the artery without opening the tumour. The possibility of being compelled to undertake this formidable measure, or otherwise abandon the case, had occurred to me before the operation. Its feasibility and practical results in the case of subclavian and carotid aneurism, otherwise beyond the reach of surgical art, had been demonstrated in the admirable operations recorded by Professor Syme; and I was prepared to seek the artery within the tumour, if unable to reach it in the usual position. Previous experiment on the patient had proved that it was impos-

sible to compress the aorta effectually while this was done; but still I hoped that the dissection made in a vain endeavour to find the common iliac, might at least enable an assistant to apply efficient compression on that vessel, or on the aorta, during the brief time that would be occupied in clearing out the clots and securing the artery in the interior of the tumour.

ARTICLE III.—*Notes on the Medical Topography of Kussouli, with especial Reference to the Quantity of Ozone at different Elevations, and the Effects of that Agent on Malaria.* By W. W. IRELAND, M.D., late Assistant-Surgeon, H.M. Bengal Army.

KUSSOULI is one of the Simla group of Himalayan sanitarium. It is situated on the first range of hills, on a mountain about 6400 feet high, which shoots up from the plain of Hindustan. The station is upon the top; the body of it is composed of the barracks, bazaar, catchery, and two station churches, which occupy detached level spots on the west shoulder of the hill. The residents' houses, about sixty in number, are scattered along the ridge to the eastward. The mountain towards the summit is very thickly wooded with pine trees,—*Pinus excelsior*, and occasionally *Pinus longifolia*.

The mountain is principally composed of schist, more or less micaceous, and compact in different places, sometimes so arenaceous as to resemble sandstone, sometimes approaching to claystone. The strata vary in thickness and distinctness; they lie with their angles of inclination towards the north side of the hill, but the south side is the most precipitous,¹—a common feature in the Himalayan chains, in which the elevating force seems to have acted towards the north-west. There are some beds of tuffa and shale; and limestone towards the base of the mountain.

The mean monthly range varies from 42° to 72°. The thermometer is continually sinking and rising again two or three

¹ All the stations of the Simla Himalayan sanitarium, save Sabathoo, rest on rocks of micaceous schist. The mineralogical composition of the rocks in Sanauer resembles closely that of those of Kussouli. They are principally of mica schist, often coloured red by hæmatite, so abundant as, in some places, to increase perceptibly the weight. Specimens of these washed with water give the reaction of salts of iron. Cases of miasmatic fever do not occur among the inmates of the Lawrence Asylum at Sanauer, if we except those who have brought the disease up from the plains. This is another argument against the theory of Dr Heyne, that malarious fevers are caused by the presence of iron in the soil. Indeed, all micaceous rocks must contain iron, mica being an aluminate of iron, combined with bases of magnesium, sodium, or potassium. Sabathoo, which is built upon rocks of calcareous formation, is more subject to fever than either Sanauer, or Dugshai, which last hill is not composed of sandstone, as stated by Dr Chevers (*A Brief Review of the Means of Preserving the Health of European Soldiers in India, Part II.*, by Dr Norman Chevers), but of the same schistose rock which prevails at Kussouli and Sanauer.

degrees. The sun is very powerful out of doors; for instance, as late as 14th October, at three o'clock, the thermometer stood at 101° , but in the shade it was 28° lower. The annual rain fall is about seventy inches. During the rains the column mounts rapidly by three, four, six, and sometimes as much as ten inches, at a time. Save during the rains, the air is almost always dry and clear.

In the year 1859, being a resident on medical leave at Kussouli, my attention was turned to the subject of ozone in the atmosphere, and I determined to test the conjecture that ozone occurs in greater abundance at high than at low elevations.

Chemical Properties of Ozone.—But, before going further, it will perhaps be prudent to put our readers in mind of the present state of our rapidly accumulating knowledge of ozone. It is an allotropic form of oxygen produced by the decomposing action of galvanism or electricity on common air or oxygen gas, or by the oxidation of some substance which has a strong affinity for oxygen, such as phosphorus or granulated zinc. If phosphorus be burned in oxygen gas it oxidises, and the remaining oxygen is found to possess certain very marked properties. Its specific gravity, according to Andrews and Tait, is above four times greater than before, and its chemical affinities are powerfully increased. Schönbein considers that the oxygen becomes “polarized.” He thinks oxygen exists in three forms; neutral or common oxygen, positive active oxygen, and negative active oxygen. The two last are generally known by the common name of ozone; but though both possess in an intensified degree the active forms of oxygen, they have different properties. In a paper in Buchner’s *Repertorium*,¹ Schönbein has shown that oxygen in its three forms of neutral O, positive active \oplus , and negative active \ominus , enters into three several combinations with gallic acid, pyrogallic acid, hæmatoxyline, and aniline. He proposes to give the name of antozonides to the positive active class of compounds, one of which has actually been found in nature, and the name of ozonides to the negative active set of compounds.

Ozone exists in the atmosphere in a proportion of 0.01 to 0.002 of a milligramme in 100 litres of air, according to Zeuger. It is scarcely necessary to describe the common way of detecting its presence, by the reaction it gives upon paper impregnated with a solution of starch and iodide of potassium. The decomposition of the iodide of potassium sets free the iodine, which produces its characteristic colour test with the starch. The deepness of the hue is believed to furnish an approximative test of the quantity of ozone in the air; and a scale of colours, on the same principle as a cyanometer, has been prepared in order to help one to compare and register the degrees of discolorization.

The quantity of ozone has been found to vary naturally at different times and in different places. It is greater during the

¹ Band x., Heft 2. 1861.

night than during the day. The temperature of the air, and the amount of ozone it contains, generally speaking, stand in an inverse ratio to one another, as also do a high barometer and a highly coloured ozonometer.

Some regard electricity as the principal source of atmospheric ozone; while others consider that, in addition to this, ozone is produced by the oxidation of the organic material of the vegetable world.¹ Its production in the atmosphere, as well as in the laboratory, seems generally to be accompanied by that of peroxide of hydrogen (H_2O_2). Ozone, or a compound of it, has been found in the sap of some fungi, and in vegetable oils, such as turpentine, coco-nut, linseed, etc. It has powerful effects on most organic substances. Blood in contact with ozonised air is completely oxidised with the production of carbonic acid and water; caseine is changed to albumen, on which last ozone has an antiseptic effect;² and it changes indigo to isatine. That such an agent should have powerful effects upon organized beings is at first sight more than probable.

Disinfecting Properties of Ozone.—As a general rule, oxidising compounds, such as those of chlorine, calcium, manganese, and nitric acid, are also disinfecting agents. It seems almost certain that ozone plays an important part in disinfecting the air and destroying the different organic gases which occasion malaria and disease. The air itself is a disinfecting compound, as every one recognises who keeps his vaccine matter in air-tight tubes; and the ozone the atmosphere contains must possess these properties in an increased degree. Schröder found that putrefaction would not go on in ozonised air; white of egg kept in it for thirty-eight days showed no trace of alteration. Moreover, there is reason to believe that ozone is the active principle in several powerful disinfecting compounds. The quantity of ozone mixed in the air, however, is normally so small, that in place of destroying mephitic compounds, these generally cause its disappearance. As is well known, ozone cannot be detected in the vitiated air of a large town like Manchester. Still we may expect the presence of an increased quantity of ozone to destroy a larger proportion of zymotic matter in the air.

I do not know of any direct proof that it destroys the malaria of miasmatic fever (intermittent and remittent): the two, that is the ozone and malaria, can co-exist: of this my experiments have left no doubt. I think it very probable, however, that ozone acts in hastening the destruction of this form of malaria.

From the experiments of Surgeon Baddeley of the Bengal Artillery, we know that the occurrence of dust storms is attended by the evolution of electricity, of low intensity, but remarkable

¹ "Bei der Oxydation der Organischen Stoffe der Ackererde bildet sich Ozon."

² Liebig und Kopp Jahresbericht der Chemie, 1858-59, and Annal der Chemie und Pharmacie, Bd. cx. p. 86.

quantity. These dust storms, then, must produce a very considerable increase in the atmospheric ozone. Mr Baddeley found "that on days when the air was dry, electrical, and gusty, from the passage of whirlwinds," solutions of starch and iodide of potassium, in an *open* cup, became blue in a very few minutes. Here we have an extra amount of ozone in the air. Does this, then, diminish the force of malaria? Such is certainly the general impression, both amongst the natives and European medical men. Mr Baddeley remarks: "I believe that dust storms have a salubrious tendency, and diminish diseases arising from malaria; and your own experience must have impressed you, as it has me, with a conviction of their invigorating effects." A regular series of observations on the number of hospital admissions, after dust storms, would be of great value. Having no access at present to Indian medical literature, I am unable to find out whether any such exist. In Mr Baddeley's book,¹ some notice is taken of indications of the absence of electricity in the air, followed, we may infer, by a diminution of ozone, from August till November 1850, during which time malarious diseases prevailed amongst the troops. Putting these facts together, there seem strong grounds for suspecting that dust storms, which are often very limited in their area, do not simply destroy miasmata by circulating and cooling the air, as Mr Baddeley is inclined to think. Circulation of the air sometimes diffuses the malaria instead of diminishing it, and cooling of the air (as during the night) increases instead of diminishing the power of malaria. But, perhaps, it would be necessary to have more definite observations before arriving at any settled conclusion on the matter in hand.

A paper upon ozone having attracted my attention, I determined, as already said, to try some experiments with iodide of potassium, pure enough to be used for photography. After one or two trials, I succeeded in making some very good ozone test-paper. The want of an ozone scale, of course, did not affect the relative value of my experiments as compared with one another, but only as compared with the half dozen of ozone scales then in vogue. I kept the papers carefully from the air, and compared them continually with one another, and afterwards with an ozone scale, when I returned to Europe.

I had the Government instruments for meteorological observations, but they were all broken, save four thermometers and a rain-gauge. I was particularly sorry that the hygrometer was not in working condition. I had six points of observation,—1. My own house, about 6000 feet above the sea; 2. The top of the Devi Ka Karor, on the east side of Kussouli, perhaps 6400 feet high; 3. A station at Gharkel, on the road to Sabathoo, about 1000 feet below

¹ Any one interested in the subject ought to consult the work of Mr Baddeley, "*Cur spirent Venti*," or a *Treatise upon Whirlwinds*. It is unnecessary to praise observations which have called forth the emphatic admiration of Faraday.

my house; 4. On the flat open hill, about 1500 feet below the hospital; 5. One near the toll-house, about 3000 feet high; and 6. Lastly, one at Kalka, at the foot of the hill, about 1000 feet above the level of the sea. Four men were employed to take the specimens of ozone paper to these points, and bring them away at regular intervals.

Before giving my results, I must repeat, Kussouli is thickly covered with pine-trees, and in some places overgrown with cannabis, which emit ethereal oils known to cause the discolorization of ozone test-paper. I tried some experiments to test this fact. Both pine and cannabis had a visible effect,—moisture alone seemed to have the same, only in a less degree. If we remember that moisture is always greater in the terai, at the foot of the hills, than at the top, the derangement will be thus somewhat remedied,—the effect of the exhalations from pine-trees at the top of the hill counterbalancing the effect of moisture at the foot. The station No. 2 was made at a place as clear as could be found from pine-trees; Nos. 3 and 4 were also almost entirely so. I expected to find the quantity of ozone greatest at the highest elevation, and diminishing steadily as one descended, but soon saw that facts would not bear this out. I had only the first four stations then. In consequence, I determined to try a lower elevation; but even here the results were not so trenchant and invariable as I expected. The average, however, stood as follows:—The quantity of ozone was greatest at point 4; then at house (1); then at 2; then at 3; (these three last were pretty close upon one another;) then came point 5; and then the one at Kalka (6), lowest of all.

This was during the rains, when the air was full of clouds, which rolled against the top of the hill, and would plunge the whole station in obscurity for an hour or two. The maximum of ozone ever obtained was at my house during a thunder-storm,—a coincidence that was not always made out, though thunder was very common at that season.

So far my results agree with those of Dr de Pietra Santa,¹ who, by comparing the quantity of ozone at Paris, Versailles, and Eaux Bonnes, in the Pyrenees, has arrived at the conclusion that ozone is most abundant at high elevations. I arrived at the conclusion that the atmospheric ozone increases in quantity up to a certain point above 4000 feet, and then diminishes. I was confirmed in this idea by two observations made in another locality near Simla. The result of these experiments was communicated to Government in a sanitary report, sent in 1859 by Dr Bell, 93d Highlanders, then in medical charge of Kussouli. They were also communicated by me to Dr H. Bruce, superintending surgeon of the Sirhind Circle. The observations date from the 30th of July to the 12th of September 1859, when the rains ceased. On the cessation of

¹ His observations were made July 1861, and communicated to the Académie des Sciences on 27th January 1862.

the rains, the results showed a prompt alteration: the quantity of ozone increased at the lowest station No. 6, remained much as usual at No. 5, and began to diminish in the four higher ones. The average results from the 12th of September to the 6th of November were as follows:—The quantity of ozone was still highest at No. 4; then slightly less at No. 2, which stood a little above 6 and 3 (these two last were almost equal). Below them came No. 5, and No. 1 stood lowest of all; but, on removing my house on 1st November to a locality very thickly overgrown with pine-trees, it rose considerably. Perhaps the larger amount of ozone towards the top of the hill during the rains, was the result of the electrical disturbance caused by the presence of so many clouds. When they passed away, and the air became dry and clear, the source of new ozone would also disappear; but at Kalka the lower regions of air would be supplied by the oxidation of the immense quantity of vegetation produced during the rains, which oxidation would now go on rapidly under the influence of increased sunshine and diminished moisture. The quantity of ozone continued diminishing at the first four points till the 20th December, with one rise from 11th to 13th November. At the same time the weather was clear, dry, and bracing, and there was a fall of snow in the beginning of December which lay under the trees for a fortnight. The health of the soldiers continued improving, while the quantity of ozone was diminishing.

On the 25th December, I reached Umballa, a station forty miles from the hills, where a month's observations showed that ozone was more abundant there than it had been at Kussouli since the end of September.

Mindful of several sources of fallacy in my observations, I have only tried to give those results which rise above the mere variations of accident.

I shall only notice two remarks on the connexion between the health of the station and the quantity of ozone. At one time, about the 20th of October, ozone was very low; there were but two men in the hospital; but three cases of sciatica came in, and several cases of fever occurred amongst the natives. On the 23d, the quantity of ozone showed marked increase, and all the patients recovered.

The only other sudden decrease in ozone (9th November) was followed by threefold increase of patients in the hospital, and by the prevalence of rheumatism and influenza, which disappeared in a few days. I am aware that influenza is believed to follow an increase of ozone,—certainly not under all conditions. There is no influenza after dust storms in India.

At first it was supposed that certain volatile oils, especially that of turpentine, possessed the property of producing ozone; but this view has now been generally abandoned. It is generally believed, however, that they contain a not yet isolated compound of ozone,

which certainly possesses almost all its active properties, and notably its oxidising ones in a high degree. Berthelot found that turpentine oil absorbed sixteen times its volume of oxygen, and was still absorbing more. This absorption goes on more quickly in the sunlight than in the dark. Berthelot is of opinion that the absorbed oxygen exists in the turpentine in three forms: one fifth in that of common oxygen; one half in that of active oxygen, probably in the form of a not separable compound; and, finally, in that of a resinous combination of ozonised oxygen, which, according to Schönbein, is an antozonide.

It is easy to perceive that, on a hill densely covered with pine-trees, under a temperature above 100° in the sun, the oxidation of volatile oil and the production of ozone must be actively going on. My experiments prove that, at a temperature from 75° to 82° , a piece of ozone test-paper, nailed to a pine-tree, showed sensible discolorization in half an hour, which was greatest on the side next the bark. One could easily note the higher degree of discolorization, by comparing it with that of a piece of the same paper nailed to the post of the verandah about six feet off. By experimenting on pieces of pine-wood bark and leaves, and specimens of *Cannabis sativa* in closed bottles, I found that they had a decomposing effect upon test-paper; that this went on actively in the sunlight, and almost ceased in the dark, unless kept up by artificial heat. Moisture alone would cause a certain, but fainter degree of discolorization, and only acted in the sun's rays. In ten experiments made in Wiesbaden (the others were in Kussouli), I found that the quantity of ozone was constantly greater at an elevation of about 200 feet above the valley where the town stands, than in the suburbs of Wiesbaden itself; and the quantity was invariably higher still in a pine plantation about the same elevation on the other side of the hill. This was in the beginning of the month of February 1862. I found the quantity of ozone much diminished in the pine plantation during frost.

The number of trees which diffuse ethereal oils is very considerable; and perhaps it is owing to the oxidising properties volatile oils, so common in the vegetable world, are known to possess, that we may explain the action of trees thickly planted round a station in arresting malaria, especially that of intermittent fever. Of the nature of this, as of every thing else included under the head of malaria, we know very little. It is, however, certain that the air is generally the vehicle for its diffusion, and that we are possessed of some available means of limiting the area in which it exerts its morbid activity. It is well known to be destructible, and is probably decomposable. Malaria, in general, is not widely diffused from its place of origin: three miles' radius is considered to be a sufficient barrier between a cantonment and irrigated lands. A belt of trees interposed between an inhabited country and a malarious district has a well-recognised influence in saving the latter from

fever; and cases are on record where the removal of a wood has caused malaria to appear in a place previously free from its ravages. A writer on the sanitary condition of Peshawar, in the *Calcutta Review*, seems to believe that this property is owing to some power the trees have of attracting and holding the malaria round about them,—a notion which has led him to prescribe that all the trees within a cantonment should be cut down,—though some treeless cantonments, *e.g.*, Mean-Meer, possess a notorious character for miasmatic fever. Does it not seem more probable that this oxidising power of trees diffusing ethereal oils has, like other oxidising agents, a powerfully disinfecting effect? It has actually been noticed that pine plantations afford protection from the malaria of intermittent fever.¹ I imagine that the ozone acts upon malaria by oxidising it slowly. Turpentine has been long used in India as a disinfecting application to putrefying wounds; and ozone is abundant in coal-tar, which has recently been so strongly recommended by the *Académie des Sciences*² as an application to putrefying wounds; it has been used for cleansing the abattoirs and fosses d'aisance of Paris. In these latter situations the reappearance of ozone has been taken as a test of the success of the disinfecting process,—the coexistence of mephitic exhalations and ozone in the air being considered impossible.

There are localities in India where it is death for a European to spend the night; and there are even military stations where malaria, that lasts only for a few weeks, kills our soldiers by the score, prostrates regiments at once, and invalids whole companies. Could a disinfecting preparation of turpentine, or coal-tar, used at night in the sleeping-rooms, diminish or neutralize the malaria? How many valuable lives might be saved if we could answer this question in the affirmative! A clump of pine-trees would then be worth a forest of cinchonas.

Dr Wood mentions³ an extraordinary and very important fact in relation to miasmata,—“These effluvia are neutralized, decomposed, or in some other way rendered innoxious, by the air of large cities. Though malarious diseases may rage around a city, and even invade the outskirts where the dwellings are comparatively few, yet they are unable to penetrate into the interior; and individuals who never leave the thickly-built parts almost always escape. This fact is notorious in relation to the city of Rome; and we have seen it abundantly confirmed in the larger towns of the United States, in the neighbourhood of which these diseases have prevailed. What it is in the air of the city which is thus incompatible with malaria

¹ Professor Wood's *Practice of Medicine*, vol. i., part ii., chap. i.

² *Comptes Rendus à l'Académie des Sciences*, Sept. 19, 1859. M. Burdel de la Poudre Corne et Demeaux considérée au point de vue de l'hygiène publique. The composition of this powder is 3 parts coal-tar to 100 of plaster of Paris or river sand.

³ *Practice of Medicine*, vol. i., part i., chap. ii.

is unknown ; but very probably it is connected with the results of combustion, for the fire and smoke of camps are asserted to have had the same effect ; and I have been assured by persons inhabiting miasmatic districts of country, that they have been able to protect themselves against the poisonous effects by maintaining fires in their houses during the sickly season." This is just what one could expect, assuming our hypothesis to be correct ; combustion would evolve the ethereal oils contained in the wood or coal, and would thus produce ozone¹ to decompose the miasmatic effluvia.

In Germany, it has been observed that in districts where pine forests are abundant, bronchitis and rheumatism are not so common as elsewhere ; and Professor Albers of Bonn regards it as certain that patients suffering from these disorders derive benefit by removing to such localities. Ozonized cod-liver oil, the reader must know, has lately been strongly recommended in phthisis.

If this hypothesis could be further confirmed, then trees emitting ethereal oils, especially the coniferæ, would be the fittest to plant round a station ; and all stations and sanatoria in India ought to be so protected. They might also be of much service in our intra-urban parks. Of such trees fortunately there is no lack.

In our hill stations we do not escape the influence of intermittent fever, and occasionally of cholera. Sir J. Ranald Martin, in his letter to the Chairman of the Court of Directors, remarks,—“ That while the hill climates are permanently serviceable against the malarious fevers of the country, their influences in conducting to the cure of these and other diseases is limited in extent,—the soldier being troubled with relapses of his disorder on descending into the plains, unless kept in the hills for a long time.” And how is this? Simply because here also the malaria still exists, though in a weakened form. Some hills are on the first range, and are thus exposed to the full influence of the malaria of the terai ; and all, however far into the hills, are surrounded by deep and narrow ravines, which receive the decayed vegetation from the hills above, upon which the sun beats furiously. Ever moist and green, they are mere nests of malaria. Hence, even at Simla, endemic fever exists ; and on one occasion it was noted that it was much more prevalent there after a number of trees on the side of the hill had been cut down.² But how could trees hanging on the shelves of precipitous rocks detain malaria by any species of attraction? Are we not driven to conclude that they diminish the force of the poison in the air by the decomposing tendency of their emanations?

We shall find an equal difficulty in supposing that trees absorb the malaria through their leaves. The leaves could only absorb what was in contact with their own surfaces ; and this, in the case of the needle-leaved coniferæ, would be most insignificant. If the miasmata be at all diminished by absorption, they are much

¹ That it actually does so can easily be proved by experiment.

² Dr N. Chevers, *op. cit.*

more likely to be diminished by the absorbing power of the turpentine oils. Some of our hill stations, Dugshai for example, are not planted with trees; I believe the trees were planted at first in Kussouli merely to afford a deep shade from the sun; but though Dugshai is situated on the second range of hills, and though the worst cases of every kind naturally go to Kussouli, which is nearest to the plains, the mortality in Dugshai is greater than that of Kussouli, being 42·892 in the 1000. That of Kussouli is 40·373. But I approach the statistics of the hill stations with the greatest distrust.

The regiments sent to the hills are generally exhausted by stress of service, or unusual amount of sickness; and the number of invalids is swelled by drafts of the worst cases, often badly selected, from the hospitals in the neighbouring stations below. The regiments are never allowed to remain long in the hills, and are often sent down to the plains for drill during the cool season, which in the hills is the healthiest part of the year. Hence the number of deaths is very considerable; but they are generally the result of disease contracted in the plains. It will not seem surprising then that the actual mortality is greater in Kussouli than in many stations in the plains of India.

One cannot even venture to compare the statistics of one hill station with those of another. One sanitarium gets a number of invalids from Peshawer, their constitutions utterly ruined by the remittent fever there. Another gets the comparatively light cases from Meerut or Bareilli. Of course the mortality of the first is much greater; but one might as well compare the average mortality in Baden-Baden with that of Madeira.

Kussouli is regarded as on the whole a good sanitarium. In common with all those of the Simla group, it is visited almost every year by what is called hill diarrhœa, a disorder which is by no means confined to the higher ranges of hills, as some seem to imagine, but is very prevalent among the hill men in the valleys, who seem perfectly at a loss how to treat it. It is most probably of malarious origin.

One thing we may note in the medical history of Kussouli, which is pretty correctly given in the work of Dr Chevers, that it is steadily improving in salubrity.¹ In 1859 it was selected as a

¹ The average mortality from 1844-55 to 1857-58 stands thus:—56·00; 56·122; 44·181; 69·519; 15·152; 21·439; 50·179; 24·550; 16·313; 43·551 (year of siege of Delhi, when many wounded came to Kussouli); 35·225.

The mortality was at first much swelled by hill diarrhœa; in 1850-51, there were in H.M. 60th Rifles thirteen deaths from bowel complaints. The regimental surgeons seem to have been at a sad loss what to do, for we hear that the springs at Kussouli, on the Kalka road, were abandoned, "the water being considered unwholesome from being much impregnated with lime." This, however, is not the case. The water from the Kalka road, tried with oxalate of ammonia, yields only a trace of lime, much less than the Edinburgh water, which is thought very wholesome. It is derived from a part of the hill not polluted by human habitation, and is separated from the drainings of the bazaar by a descending ridge of rock which turns them another way. The water is

sanitarium for cases of all descriptions from the Punjaub, and the results were highly favourable. From the 1st of March to the 30th September 1859, there arrived 242 invalids; 140 recovered, 35 were invalided, 5 died, and 63 were remaining on duty. Of these last, 37 were to go down on the 1st of November. Some had recovered, and it was considered unadvisable to subject the rest to the cold of winter. Dr Bell, in charge of the *dépôt*, states that he had not seen a single case of hill diarrhœa, as described, that season. There were nine cases of ordinary diarrhœa admitted into hospital, all very mild, and above fifty of sciatica—the sequela of ague. The fever cases were slow in mending, and subject to relapses. Two of the deaths were from hepatic abscess, and three from the exhaustion of miasmatic fever contracted below.

One might be disposed to assign the improved salubrity of the station to improved accommodation; but in Kussouli, in 1859, when the statistics were so good, the accommodation was never worse, many of the men were actually crowded into the commissariat go-downs, owing to the burning of the barracks in the winter of 1858. The season was not an over healthy one, and the 93d Highlanders at Sabathoo suffered severely from fever.

Most stations in the plains improve in salubrity after being a few years established. This is easy to account for. Planted within a few miles of a native town, they are exposed to the putrid emanations which spring from the border of filth surrounding every Indian city; but as the cantonment laws come into force, and the land becomes cleared and drained, miasma decreases along with the annual mortality and percentage of sickness. With a hill station the reverse is the case. It is planted upon the hill-top, on a site occupied perhaps by only a dozen of huts, and the presence of a European regiment brings a large population of natives, who accumulate dirt and filth in every cranny of the hill. In the case of the cantonment the ground gets always cleaner; in that of the hill sanitarium it becomes continually dirtier. The improvement in the health of Kussouli, then, cannot be attributed to improved cleanliness.

May not this continual improvement in the health of the sanitarium be owing to the growth of the pine trees which were planted when it was first established, have been most jealously guarded, and now have grown so high and thick that they overspread the whole station. The scientific reader will, I think, admit that this hypothesis is one which, at least, is deserving of the fullest examination and experiment.

BONN, *March* 1862.

still used by the natives for drinking. There are strata of alumnaceous slate above the cistern, which might have been mistaken for limestone. The place from which the water for the cantonment is now most unfortunately drawn is on the other side of the hill, and into it half the dirty water and drains of the cantonment must flow. The deaths from bowel complaints, 1851–52, were 27; but next year they were only 2 out of 194 cases of diarrhœa, and are becoming less formidable every year. I have no returns later than 1859.

ARTICLE IV.—*Notes on Surgical Cases treated by EBENEZER FLEMING, M.D., L.R.C.S E., Stranraer, Wigtownshire.*

IN consequence of several contracts in connexion with the Portpatrick Railway having been in operation in the neighbourhood of Stranraer during the last two years, an unusual number of accidents has occurred. This has been particularly the case on some parts of the works on the Portpatrick cutting, which were of a very hazardous nature; and, although the accidents were in themselves serious, the amount of injury inflicted cannot be considered as large, if the character of the operations and the number of men employed be taken into account. Having been appointed surgeon over all the works in this neighbourhood, these accidents came under my charge, and while an account of the injuries resulting from them will form the principal part of the present article, I shall not restrict myself to them, but shall refer to other cases which have occurred in the course of my practice.

Before narrating individual cases, I shall give a brief statement regarding the fractures and dislocations which have come under my care.

FRACTURES.

I. Fractures of Lower Jaw.—Two cases. 1st, Fracture through each perpendicular ramus. Treated with gutta-percha, moulded, from ear to ear. Recovery, without deformity. 2d, Compound fracture of lower jaw: reported.

II. Fractures of Clavicle.—Four cases. One reported.

III. Fracture of Sternum, Middle.—Treatment, Pressure by plaster and broad bandage. Antiphlogistic treatment. Recovery, with a certain amount of bony prominence. No chest affection.

IV. Fracture of Ribs.—Many cases. All recovered. One reported.

V. Fracture of Humerus, comminuted, with external wound.—This is the only case of fractured humerus I have met with, and it occurred in my own person, from having been forcibly thrown out of my gig, on the 12th February 1861. The external wound was small. Dr Orgill saw me immediately after the accident, and carefully moulded gutta-percha from the summit of the shoulder to the olecranon, and applied a small internal splint of the same material. The dressings were securely fixed with firm leather straps, but, notwithstanding, the rubbing of the broken fragments was perceptible to people in the room during the first week, and to myself up to the seventeenth day. This I believe was caused by the extreme difficulty of fixing the comminuted portion of bone, about an inch in length. Union was found to be complete in five weeks, when all external appliances were removed. No deformity whatever remains.

VI. Fractures of Radius.—Nine cases. Of these nine cases, eight were close to the wrist-joint; the invariable cause being falls on the hand. In two cases considerable stiffness and deformity remained for months. This I ascribed to my retaining the dressings too long, and putting up the fracture with the hand straight. Now I make it a general rule in these fractures to keep the hand in a state of *easy flexion*, and the *thumb free*. I believe these are points of great practical importance in the treatment of Colle's fracture, and perhaps not sufficiently appreciated by many members of the profession, and the consequence is, deformity for months, if not years. And if at this stage the patient chance to visit a bone-setter, he will pronounce the wrist out of joint, and, after certain preparations, use great force, to overcome the adhesions resulting from *rusty joints* and contracted muscles and tendons. I observed,

in a so-called case of malpraxis reported in the March number of the *Edinburgh Medical Journal*, the following quotation: "*The third day after Cranstoun's manipulations, the patient was seen by a witness hemming a handkerchief.*" Now, if the plan of treatment I am advocating had been followed—the hand in a state of easy flexion, and the thumb free—I believe Mr Oliver would never have heard more of the case. With reference to the shoulder,—in several of my patients, and, in fact, in my own case, great pain and stiffness of that joint remained for a time, and I can easily imagine how a person ignorant of these matters would readily credit the assertion that "*the shoulder also was out of joint.*" The remaining case occurred at the centre of the bone, and presented no feature of interest.

VII. Fractures of Ulna.—Three cases. Recovery, without deformity.

VIII. Fractures of Metacarpal Bones and Phalanges of Fingers.—These I treated with slender wooden splints. In one case, where the accident was caused by the revolving wheel of a steam-engine, in addition to a severe Y-shaped laceration, exposing the extensor tendons on the back of the left hand and ring finger, the little finger was fractured through the proximal phalanx, and hung loose from the hand. I sent for chloroform, as I considered amputation indispensably necessary; but, on approximating the wound, which was ragged, and extended nearly the entire length of the posterior part of the finger, and applying a mould of gutta-percha in front, it looked so well that I resolved to try *conservative* surgery. In five weeks union was complete, and the wound almost healed.

IX. Fractures of Femur.—Seven cases. Such of these cases as present features of interest I shall detail more fully—one of them I have reserved for separate consideration.

1st, Wm. Wightman, æt. 18 years, railway labourer, Glenlucc. 8th June 1859.—Below trochanter. Caused by a heavy fall of earth. Treatment,—Long splint, extension by means of long straps of adhesive plaster. Union complete in six weeks; half an inch shortening.

2d, Alexander Aitken, æt. 24 years. 20th Oct. 1859.—Lower third. Cause,—Fall on street. Long splint inadmissible on account of patient's legs being bent, the result of previous accidents; and, as he is rather a surgical curiosity, owing to the abnormal state of fragilitas ossium he has shown from early childhood, the simplest cause producing fracture of one or more bones, I add a few remarks on his case. He had for many years required to use crutches, and the last accident was caused by his being knocked down on the street. I found he had sustained a fracture through each perpendicular ramus of the lower jaw, fracture of several ribs, and fracture of the right femur at its lower third; blood flowed copiously from the left ear, but no head symptoms were developed. He made an excellent recovery from these injuries. I requested him lately to draw out a statement of the several fractures he had sustained: the following is the reply from his own handwriting:—"This is a full report, so far as I am able to remember, of the misfortunes that have befallen me. When eighteen months old, got my thigh-bone broke; since then I have legs and thighs upwards of thirty-four times broken, likewise arms broken five times below the elbow, ribs eight times, jaw-bones once, finger four times broken.—ALEX. AITKEN." He was only under my care once; but I remarked that union progressed with great rapidity, and he required much less care and trouble than I have usually experienced in treating patients with fractured bones.

3d, William Alexander, æt. 7 years. 6th Oct. 1860.—Fracture through middle of femur, caused by a fall from a cart. Treatment,—Long splint, extension with straps of adhesive plaster. Union complete in five weeks, without the slightest shortening or deformity.

4th, Robert Evans, æt. 5 years. Fracture of femur, upper third. A weak, idiotic child, subject to severe attacks of convulsions, often occurring several times daily. In one of them this morning, 17th November 1861, he fractured the right femur. I applied the long splint, and moulded gutta-percha over the site of fracture. Prognosis was unfavourable from the first. I failed in securing

the fractured bone sufficiently to prevent a spicula from wearing through the skin, as the fragments could not be kept in apposition in consequence of the daily-recurring convulsions. So the fracture, at first simple, became compound. Suppuration set in, followed by hectic fever, and my little patient sank on the 8th January 1862, eight weeks after the accident.

5th, 10th October 1861.—Mrs Cruikshanks, æt. 78 years. Fracture of femur, intracapsular. Cause,—Simple fall. The fracture existed six days prior to my examination. I found shortening, eversion of the foot, with distinct crepitus on extending and rotating the limb. No local treatment was adopted except keeping the limb in an easy position. Stimulants, nourishing diet, mild laxatives and sedatives were prescribed as required. She survived the *immediate* effects of the accident, but sank from long confinement and debility on the 21st March 1862, twenty-three weeks after the injury.

6th, D. B., æt 58 years. On 10th January 1862, when descending from the hind seat of a high carriage before it was stopped, he missed the step and fell before the wheel, the right thigh being in a measure doubled over. I saw him an hour and half after the accident, and found a fracture of the lower third of the femur, which had been rendered compound, most probably in removing him in a gig to a friend's house about a mile distant. The wound was on the external aspect of the limb, and was caused by the protrusion of a small spicula of bone. There was great swelling of the limb. I closed the wound (which was bleeding profusely) with straps of adhesive plaster, and adjusted the long splint, at first applying the dressings loosely. Extension was as usual kept up by straps of adhesive plaster extending from the knee to the ankle. The wound healed without suppuration, thus converting the case into a simple fracture. Circumstances required the patient to make a journey of seventeen miles, six weeks from the time of the accident. This was accomplished in a covered carriage, without any injury to the limb, but, as a safeguard, I requested him afterwards to keep the bed for three weeks longer, after which I allowed him to move about on crutches. There is scarcely any appreciable shortening or deformity, except stiffness of the knee-joint, which is being gradually overcome by motion, etc.

X. Fractures of Tibia.—Four cases. Treated with long side-splints, and gutta-percha moulded over fractured portion of bone. In one of the cases union was delayed till the eighth week. This was the only case of simple fracture which occasioned me any uneasiness. Eventually, however, union became perfect, with a slight projection of the inferior fragment. In all the other cases the recovery was satisfactory.

XI. Fractures of Fibula, with Dislocation of Foot outwards.—Four cases. Treatment,—Reduction of dislocation; afterwards the application of Dupuytren's internal splint. In all the cases recovery was complete.

DISLOCATIONS.

I. Shoulder, downwards into Axilla.—One case. Twelve hours unreduced. Great swelling of arm, and excessive pain on attempting to move the joint. I put the patient, a strong, muscular man, under the influence of chloroform, and, with my foot in the axilla, kept up extension for a few seconds, when the dislocation was reduced. No deformity whatever remains.

II. Dislocation of Ulna and Radius backwards.—Five cases. One reported. Treatment,—Extension and counter-extension until the arm could be fully bent. In all these cases, except in the one reported, the functions of the joint were soon restored.

III. Dislocation of Hand inwards and outwards, compound.—One case. Reported.

IV. Dislocation of Astragalus outwards and forward, with other injuries. Reported.

SPECIAL CASES.

CASE I.—*Wound through Sclerotica and Cornea, followed by Prolapsus of Iris. Recovery, with little impairment of vision.*

Patrick Sherdon, railway labourer, æt. 31 years. 26th April 1860.—While

engaged on the Portpatrick Railway works, was struck on the left eyeball with a piece of sharp polished steel, which was lodged in the substance of the eye. I was told that the foreign body had been removed, and, on examination, I found it was so. It had penetrated the cornea at its internal inferior margin, close to and partly through the sclerotica. The lower part of the anterior chamber contained blood; the pupil had lost its circular form, and presented an acute angle at one side, the angle corresponding to the external wound.

The treatment consisted of confinement to a dark room, the application of several leeches around the eye, followed by extract of belladonna moistened and smeared along the eyebrow; the eye, but particularly the wound, was touched with a ten-grain solution of nitrate of silver; and he was directed to use several times daily a weak solution of bichloride of mercury to subdue the superficial inflammation. Internally, small doses of calomel and opium were administered, until the specific action of the former was produced. By these measures the traumatic inflammation which attacked the sclerotica, cornea, and iris, was much modified. The iritis, especially, was well marked, as evinced by quick pulse, deep-seated supra-orbital pain, and irregular pupil. At the end of four weeks the symptoms were very much improved, and vision gradually restored; but there remained at the external site of injury a small aqueous tumour; there was also great lachrymation. At this time he became impatient to return to his work; and as I knew he could not do so for some considerable time, I gave him a letter to my friend Dr George Robertson of Glasgow, who considered the small tumour a hernia or prolapsus of the iris. He applied a stronger solution of nitrate of silver, and gave him a wash containing atropine. Under this treatment the tumour rapidly disappeared. The superficial inflammation also gradually subsided, and vision became stronger; but he was unable to resume work for twelve weeks after the occurrence of the accident. *2d April 1862.*—On examination to-day, I find there remains a dense opaque cicatrix, scarcely perceptible on a superficial examination; the pupil regular, but slightly oval towards the cicatrix; no adhesions. Patient can see as far with it as sound eye; but there is a little dimness,—in the patient's own words, "*scarcely noticeable.*"

CASE II.—Severe Wound of Head; Dislocation of one of the Dorsal Vertebrae; Amputation of Left Hand. Amputation of Right Foot. Death from Tetanus on the Eleventh Day.

John Kerr, æt. 34 years, porter to the Portpatrick Railway Company. *8th June 1861.*—After adjusting the points near the Stranraer station, for the arrival of the late train, he had gone to a bridge about a hundred yards distant to avoid a heavy fall of rain. On hearing the train approach, it is supposed he was running to reach his post, when one of the buffers of the engine struck him on the back, throwing him between the rails, and ploughed him along the ground for a distance of about twenty yards. On being freed, it was found that the wheels on one side had passed over the left hand, on the other, over the right foot. I was hurriedly called to see him between ten and eleven o'clock. I found Dr Orgill and Dr Ross of Kirkcowan in attendance (the latter chanced to be a passenger in the train). From them I learned that they had discovered a dislocation in the site of one of the dorsal vertebrae, in addition to the injuries which were apparent, viz., a severe lacerated wound of the scalp, extending from forehead to occiput. The left hand was a confused mass of comminuted bones and mangled soft tissues; the right foot was cut away at the ankle-joint,—a portion of the os calcis remained.

The state of shock was so great that he could not be removed from the station-house, and operative interference was deferred. We proceeded, however, to wash the large wound of the head (which was filled with sand and other debris), and approximate its ragged lips with long straps of adhesive plaster. It was agreed that I should pass the night with him, lest hæmorrhage should occur.

During the night he was restless and uneasy—the injury to the back seemed

to occasion the most pain. There were two jets of arterial hæmorrhage: I tied the vessels.

9th June, 12 o'clock.—Called urgently to see him on account of retention of urine. Used an elastic catheter, and drew off about a pint of high-coloured urine. No more hæmorrhage. Continues drowsy. Pulse 108. Respirations tranquil, 26 per minute. After he had rallied sufficiently, we arranged that he should be removed to a private room in the Rhinns of Galloway poorhouse, engaged by the secretary of the Railway Company for the purpose. After his removal he never complained again of pain in the back. The bone seems to have spontaneously resumed its position.

4 o'clock P.M.—Present, Drs Orgill, Easton, and myself. We agreed first to amputate the hand, which I did, by antero-posterior flaps, above the wrist, the patient being under the influence of chloroform. Three vessels required ligation. The flaps were brought together by straps of adhesive plaster.

We next consulted about the foot. To prevent the shock of a second amputation, we resolved to dissect out the remaining part of the os calcis, saw off the malleoli, bring the flaps together, and give it a trial. This operation was performed by Dr Easton. The flaps were composed almost entirely of skin, and some of it bruised. They were brought together by adhesive plaster.

9 o'clock.—Pulse 130. Still speaks incoherently, and is drowsy. Used the catheter.

10th.—Made a little water this morning, but, as the quantity was small, the catheter was again used. Pulse stronger, beats 110. Changed dressing of head. Ordered one ounce of castor-oil. Also to have beef-tea, and a small quantity of wine.

11th.—Symptoms improving. Bowels moved twice with the medicine; makes water freely. Has some recollection of past events; but is confused in everything relating to the accident. Recollects of running to the bridge to avoid the rain.

12th.—Wound of head much cleaner; granulations healthy. Dressed the stump of the wrist, which is healthy in appearance, and beginning to unite. Evening.—Examined the foot; the skin in a sloughing state, the bone almost bare. We resolved to amputate higher up next morning.

Present, Drs Orgill, Easton, and myself. The patient was put under the influence of chloroform, when Dr Orgill amputated half-way up the leg by a long posterior and a short anterior flap. A smart jet of arterial hæmorrhage jerked from an artery in the bone. The flow was arrested by a small peg of wood. The flaps were brought together and secured by long straps of adhesive plaster. He progressed favourably until the evening of the 16th, when symptoms of tetanus commenced insidiously, and became fully developed on the following morning. The treatment we followed was chloroform inhalation, and calomel and opium; but the paroxysms increased in number and severity until his decease in one of them on the 18th, being the eleventh day from the occurrence of the accident.

Remarks.—Notwithstanding the severe and complicated nature of this case, there was good prospect of recovery until tetanus supervened, most probably induced by the lacerated state of the hand. I do not believe he could have survived the shock of the accident but for his sober habits, excellent constitution, and fine muscular development.

CASE III.—Compound Comminuted Fracture of Left Leg; Compound Fracture of Right Leg; and Dislocation of Patella. Amputation of Left Leg above the Knee. Death half an hour after the Operation.

Joseph Young, æt. 15 years, labourer. 18th June 1861.—Was ordered to take some chains to a smithy on the works to be repaired. Taking advantage of two waggons proceeding in the same direction, he seated himself on the hindmost of the two, and, on jumping out, fell across the rails; at this time, the waggons being freed, suddenly rebounded down the incline, passing over both his legs. He was conveyed to his father's house in Portpatrick village,

and I was asked by one of the contractors to visit him as quickly as possible. On examination with Dr Robertson, the left leg was found hopelessly injured. About two inches below the knee there was a compound comminuted fracture of both bones; soft parts mangled and bruised the entire length of the limb beneath the fracture; arteries torn, but not bleeding; venous oozing; foot cold. There was also a compound fracture about centre of right tibia, simple fracture of lower third of fibula, and dislocation of patella upwards among the extensor muscles, with rupture of patellar ligament. These injuries Dr Robertson had very properly reduced and attended to, prior to my arrival.

The boy was pale, and apparently of delicate constitution. Pulse was feeble, and beating 120 in the minute: so we decided on administering brandy and water until reaction should be established.

After an hour's delay, the pulse improved somewhat, and, as the left leg caused the patient perfect agony, we decided to proceed with the amputation. After he was placed under the influence of chloroform, Dr Robertson amputated, by antero-posterior flaps, above the knee. The patient bore the operation well, but immediately afterwards the pulse began to flag, and he rapidly sank half an hour afterwards.

Remarks.—This patient presented a marked contrast to the preceding one. He was of feeble constitution, and had been complaining for some time previous to the accident of a pain in his side. He was evidently tainted with the scrofulous diathesis. I believe immediate amputation gave him the only chance of preserving his life.

CASE IV.—*Dislocation in the site of one of the Dorsal Vertebrae; Wound into Ankle-joint on each side. Recovery.*

William McKnight, æt. 31 years. 24th June 1861.—While standing on the brake (reversed) at the side of a waggon descending the incline from the Stranraer station to the harbour, was suddenly jammed between the waggon and a bank of earth, the right foot being severely crushed by one of the wheels of the waggon. I was requested to visit him at ten o'clock A.M., and found there was neither fracture nor dislocation, but a large wound on the internal aspect of the foot, exposing and opening into the joint; also a smaller wound, beneath the external malleolus, also opening into the joint.

I applied some skin-plaster to the wounds, and bandaged them temporarily; and directed him to be conveyed to his own house on a board, where, on examining him more minutely, I found a well-marked dislocation in the site of one of the dorsal vertebrae.

Dr Orgill shortly afterwards met me in consultation, when we decided on bringing the lips of the wound together with long straps of adhesive plaster and a bandage. To the back we applied a large piece of pasteboard, well padded with cotton, and secured with a broad bandage.

Evening.—Back very painful. Unable to make water. Used the elastic catheter, and drew off a considerable quantity of healthy urine. Pulse 100, strong.

25th.—Ankle so much swollen and painful, that I had to discontinue the plaster. Strips of rags moistened with cold water to be constantly applied.

After the first two days, as the patient was able to make water himself, the catheter was discontinued.

He continued to suffer a great deal of pain in his back until the 30th, when a large fluctuating tumour formed at the superior portion of the left gluteal region. After Dr Orgill and I had examined it carefully, we decided on laying it open, which I did by a free incision. A plateful of dark-coloured blood flowed from the wound, the escape of which gave him immediate relief, and he never complained of pain in the back again.

During subsequent visits I found some ointment, which had been prescribed by a non-professional friend (and first applied to the back!), used as a dressing for the wounds of the ankle. After repeated remonstrances, which I found of no avail, I ceased my attendance.

2d April 1862 (fully nine months after the accident).—At my request the patient visited me. I found a slight prominence showing where the dislocation of the vertebræ had been, but there was no complaint of weakness or pain. The ankle has considerable motion, but continues swelled, especially at night, after he has been standing all day. Some small pieces of bone have from time to time found their way through the internal cicatrix.

Remarks.—This was the only surgical case, before or since, where I found my directions unattended to. As a general rule, I have found my services appreciated among all classes of the community, and by none more so than the labouring man. I had two leading principles in view in the treatment of this case,—1st, The constant and assiduous application of cold water; 2d, Rest, long continued, as so well explained recently by Professor Hilton of London, in the treatment of affections of the joints. Had they been carried out as I wished, the result might have been different.

CASE V.—*Compound Comminuted Fracture of Humerus, with great Laceration and Bruising of Soft Tissues. Amputation at Shoulder-Joint. Recovery.*

Joshua Wallace, æt. 22 years, railway labourer. 10th August 1861.—Had been working near the Piltanton viaduct, and, on proceeding homewards, availed himself of a seat in the first of three waggons filled with stones. Before descending an incline of about two miles, the gradient of which is one in seventy-five, the two first waggons were accidentally freed from the third, which had the brake attached, and, gaining impetus as they descended uncontrolled, they at length came in collision with other waggons stationed on the same line of rails, and also filled with stones, about half a mile from the Stranraer station. The force of the concussion caused the waggons to rebound several yards, and threw Wallace out, the right arm lying across the rail, over which, on regaining impetus, the wheels of the waggons passed.

At the time of the accident I was engaged about a mile out of town. A messenger having been despatched to inform me of the accident and request my attendance, I found on my arrival Dr Easton superintending the removal of the patient to his house in Stranraer. Dr Easton had previously bandaged the limb temporarily, and had judiciously administered stimulants.

On examination, we found the right arm almost severed from the body, half-way above the elbow; the integument torn and bruised up to the axilla; the bone comminuted; great swelling; pain and tension of tissues around shoulder and front of chest; lacerated wound of left hand, extending along palmar aspect of thumb and forefinger. Patient was in such a state of shock, that we agreed to defer operative interference until reaction should ensue. In the mean time, I requested the assistance of Dr Robertson of Portpatrick. (I may here remark that the contractors had at the outset agreed that Dr Robertson should assist me with operations at the Stranraer end of the contract, and that I should assist him at the Portpatrick side.)

Same night, 10 o'clock.—Considerable reaction; but friends requested that the operation might be deferred till next morning. We acceded to their request. Before leaving, I felt the axillary artery pulsating through one of the wounds in the axilla, and, as a little dissection exposed it, I thought it a safe expedient to tie it, so as to lessen the risk of hæmorrhage during the night.

11th, 9 o'clock A.M.—With the assistance of Drs Easton and Robertson,—the patient having been brought fully under the influence of chloroform,—I proceeded to amputate the arm at the shoulder-joint by a large anterior-superior flap, disarticulating, and then forming a small internal inferior flap. After the first flap was made, I instantly secured three arteries. The disarticulation was difficult, on account of the short leverage of the humerus, and the depth of the joint from the line of incision; for *no established* rule could be followed in the formation of flaps, on account of the great laceration and bruising of the skin and other tissues on the internal aspect of the limb. Less than a cupful of blood was lost during the operation, the flaps were brought together by several stitches, and water-dressing freely applied.

During the first four days he remained in a very precarious state, pulse ranging from 110 to 130, but afterwards his recovery was in every respect satisfactory. All the ligatures came away within fourteen days. The last entry I find in my diary about him is as follows: "At this date (14th September) the stump is almost healed, and the patient is gaining in strength."

Remarks.—This case is well calculated to show how great an injury a healthy person may sustain with comparative impunity. The case at first was unpromising, not only from the severe shock of the accident, but more particularly on account of the bruising of the tissues around the shoulder-joint, and the anterior aspect of the chest. And yet, in less than two months from the accident, he was able to earn, on the works, fifteen shillings weekly, being only one shilling less than his former wage per week.

CASE VI.—*Compound Fracture of Lower Jaw.*

James Clanachan, æt. 12 years. 21st October 1861.—This afternoon a messenger came per 3.50 train to request my attendance on a boy who had been kicked on the face by a horse during a sale of cattle at Genoch, the residence of Alexander Mc'Neel Caird, Esq., procurator-fiscal. On arrival, I found the little fellow bleeding from a deep wound about two inches in length, situated above the right sub-maxillary gland. The bone was seen and felt through the wound to be obliquely fractured; and, on putting the fingers into the mouth, the fracture was found to extend between the first and second molar teeth, neither of which was loosened. The posterior fragment was much elevated over the anterior, which was depressed. I first reduced the fracture, and then moulded gutta-percha from the ear to the symphysis of the jaw. While the gutta-percha was cooling, I brought the lips of the wound together with straps of adhesive plaster, and then applied the gutta-percha with a simple bandage over the crown.

22d October.—Anterior fragment again much depressed. Removed the bandage and applied a firm leather strap, passing perpendicularly upwards from under the chin, and buckled in the position of the anterior fontanelle. To prevent the maxillary strap from falling forwards, another strap was passed round the head, and was buckled in the occipital region. A full description of this apparatus will be found in Dr Frank H. Hamilton's (of Buffalo) work on Fractures and Dislocations, and I can testify to its practical utility. The fragments, after its application, never again became displaced, and I was able to intrust a female friend with dressing the wound daily.

In four weeks the fracture was united, but the wound not quite healed. On subsequent examination, I found that, except the cicatrix of the wound, no deformity whatever existed, and it would be almost impossible to make out the exact site of the fracture.

(*To be continued.*)

ARTICLE V.—*Observations on some Local Anæsthetics.* By DYCE DUCKWORTH, M.R.C.S. Eng., President of the Royal Medical Society, and RICHARD DAVY, M.R.C.S. Eng., Member of the Royal Medical Society of Edinburgh.

(*Read before the Royal Medical Society, 7th March 1862.*)

SOME remarks made by Dr Bennett in a clinical lecture the other day, with regard to the employment of chloroform as a local anæsthetic, excited some discussion amongst the clinical clerks. The evidence brought forward at the close of the lecture being of an unsatisfactory nature, we were induced to institute some experiments,

with a view to satisfy ourselves as to the real merits of chloroform when employed as a topical anæsthetic. In carrying out these experiments we were actuated only by the desire to arrive at truth, having no preconceived theories to bias our investigations.

Having laid our conclusions before Dr Bennett, who examined them and alluded to the subject in another lecture, we proposed to bring before this Society the results of our experiments, with a view to their further elucidation through the medium of discussion, and in the hope of obtaining additional information, by awakening an interest in the minds of our members.

The title of our communication shows that we have been engaged only upon *some* local anæsthetics, for, of course, there are many agents of this nature. We may, then, briefly state that our investigations have been confined to chloroform in liquid and vapour, ammonia in liquid and vapour likewise, to chloroform and acetic acid according to the new French form of chloracetisation, and, lastly, to freezing mixtures.

We purpose in the first place, considering the subject in a *physiological* manner, and in the second to adduce the results of *pathological* inquiry.

It has frequently been argued that the word "*anæsthetic*" is inapplicable and untrue with regard to chloroform; for our own part we could never value the force of the argument used against its employment, neither shall we recognise its validity. In a lecture delivered by Professor Bennett last week in the Royal Infirmary, he based his argument against the correctness of the applicability of the word "*anæsthetic*" to chloroform on the following grounds:—"Looking at the meaning of the word *anæsthesia*, I find it implies a want of feeling, hence as chloroform destroys the sense of touch by first producing loss of consciousness, the term *anæsthesia* is inapplicable, and is only employed as a mask to conceal its true action as a stupifying agent." These views are also expressed at page 432 in his work on the "*Principles and Practice of Medicine*," where he characterizes the present use of the term as erroneous and unscientific.

In opposition to Dr Bennett's argument, we maintain that the Greek verb *αἰσθάνομαι*, means in its strict and true classical sense, "*I perceive with the senses*;" that the cognate accusative *αἴσθησις*, implies "*perception by the senses*;" and the word *ἀναισθησία* itself, means "*stupidity*," with its corresponding verb *ἀναισθητέω*, "*to be senseless or stupid*." The misunderstanding of the true and comprehensive meaning of the verb *αἰσθάνομαι*, has evidently, we apprehend, induced Professor Bennett to object to the use of the word *anæsthetic* when applied to chloroform; but throughout the present paper we shall use the term *anæsthetic* in its correct and ordinary acceptation. Professor Simpson informs us that, so far from the term *anæsthesia* being a new one in medicine, it was employed by Dioscorides 1200 years ago, and hence its present employment by the profession.

1. *Observations on the Local Physiological Effects of Chloroform and its Vapour.*

EXPERIMENT 1.—*Vapour.* We applied the vapour to our arms in test tubes for periods of ten and fifteen minutes. In about three minutes a feeling of coldness was experienced in the parts operated upon, the skin becoming reddened. This sensation merged into one of slight irritation, but never amounted to pain. In from ten to fifteen minutes, on pricking the arm, sensibility was decidedly diminished, though not abrogated. Subsequently no local signs of irritation remained.

EXPERIMENT 2.—*Topical application of Chloroform in the form of liquid.* We applied chloroform on lint, and in test tubes, to the backs of our hands and arms for periods varying from ten to thirteen minutes. Very soon an irritative action commenced in the part, gradually increasing and becoming slightly painful for about seven minutes, when the pain began to diminish, and a sense of heat remained in the part, with well-marked redness. On pricking the arm in one case, it was found totally insensible to the stimulus for the space of half a minute, after which sensibility gradually returned. In the other case, total anæsthesia was not produced,—the application, however, being maintained for ten minutes only. The sensibility was nevertheless greatly diminished. In both cases persistent redness remains, the line of pressure being especially well-marked, and the parts continue super-sensitive if touched.

2. *Application of Ammonia in Vapour and Liquid.*

Vapour.—Mr Davy applied the vapour of the liquor ammoniæ fortissimus to the back of his arm for ten minutes; very slight tingling ensued. No anæsthesia nor signs of irritation.

Liquid.—He next applied a mixture of equal parts of liquor ammoniæ fortissimus and water to the flexor surface of his forearm in a wide test-tube for ten minutes. Irritation commenced immediately, and increased gradually up to the time of removal, when perfect anæsthesia resulted. This, as in the case of liquid chloroform, quickly disappeared. The cuticle was found to be detached from the cutis vera. Irritation continued at the part for ten days afterwards.

3. *Chloracetisation.*

Our attention has been directed within the last few days to a new mode of producing anæsthesia. It was introduced by M. Fournié, who communicated his results to the French Academy not very long ago. He announces that the most perfect anæsthesia can be produced by mixing equal parts of chloroform and glacial acetic acid in a vessel, filling it half-full, maintaining the mixture at the temperature of the hand, and the room in which the experiment is performed at a temperature of 62° Fahr. The mixture is to be applied to the sound skin; the part to be acted on being marked

off by a piece of diachylon plaster. In five minutes, under these circumstances, total anæsthesia is to be looked for. Upon the rapidity of its action, and the slight inconveniences occasioned thereby, are based the merits of this method. We were much interested in reading M. Fournié's announcement, and determined to give it a fair trial. We therefore complied with all his directions, and proceeded to try chloracetisation. Two drachms of glacial acetic acid and a drachm and a half of chloroform were put into an ounce test-tube, warmed to the heat of the hand, and then applied to the skin of the forearm. In from ten to fifteen seconds, the most intense and violent smarting commenced in the part, increasing to such a degree that it was *perfectly insufferable*, and we were instantly compelled to apply active cold douching to the parts. The pain was excruciating; the cuticle was uplifted, and the surrounding parts deeply reddened. Some drops which escaped from the tube, lighting on the forehead of one of us, caused most violent pain. The smarting continued severe afterwards, and the parts assumed the appearance of urticaria. The pain was of a stinging character, intense and prolonged like that of nettles. This was due evidently to the presence of acetic acid, which produces symptoms quite analogous to its homologue, formic acid, an irritating ingredient in the glands at the base of the hairs in various species of stinging urticæ. Chloroform assists the action of the acetic acid, severe enough in itself, by favouring its absorption; and we know that a solution of extract of belladonna in chloroform acts with tenfold greater rapidity than an ordinary one. On the whole then, we have no reason to be pleased with chloracetisation. In the course of the white mark produced no pain was felt; this white mark differs from the white form of inflammation (due to capillary paralysis), in being caused by the raised cuticle. When deep pressure was made, acute pain was felt. We cannot conceive it possible for the mixture to be tolerated for five minutes on any part, as M. Fournié directs; our mutilated arms still bear testimony to its severity.

Generalizations.—As to the physiological actions of these various articles, we are inclined to the belief that they do not produce their effects till an action, amounting to one of revulsion or counter-irritation is brought about; or in other words, that their anæsthetic effects are due, and contemporaneous in a measure, with a counter-irritative action, since a varying amount of irritation in all cases precedes the anæsthesia. We mean by counter-irritation the production upon the surface of a powerful impression, which seems to be capable of arresting and diverting, as it were, the attention of the system, and thus for a time checking or relieving a morbid process.

Also, in the case of the human subject, we believe the local application of chloroform *in vapour* to possess the feeblest anæsthetic powers. *In the form of liquid* the effects, though transient, are

much more strongly marked. The same remarks apply also to the liquor ammoniæ, excepting that the results obtained from its vapour were negative.

4. *Observations on the Local Effects of Chloroform in the Treatment of Disease.*

Pain.—With reference to the cases in which we may expect local anæsthesia to be beneficial, we may here observe that there are different kinds of pain; and Dr Headland very ably divides them as follows:—

First, Inflammatory pain from active disease. This is aggravated by pressure, and has a local cause.

Secondly, Irritative pain. This depends on nervous irritation, has a local origin, but is often relieved by pressure or friction. *Neuralgia* is a pain of this kind; so is the pain inflicted by the knife; that produced by lead colic, gall stone, renal calculus, etc. This, then, is the only kind of pain which we may hope to benefit by local anæsthetics.

Thirdly, Pain that is reflex in its origin, *e.g.* the pain in the knee in hip-joint disease. We can do no good here with anæsthetics of a local kind.

Fourthly, Centric. This does not originate in the painful part, but in the brain or nervous centres; such are the pains of hysteria. Local anæsthetics are useless in these cases, and we must combat the central disorder.

EXPERIMENT 1.—*Action of the vapour of chloroform in a case of frontal neuralgia.* We applied the vapour of chloroform locally, by means of lint soaked in the fluid, and placed in the bottom of an inverted wine-glass. At the close of its application, which was continued for ten minutes, the patient's severe neuralgia was completely relieved; the common sensibility of the part was not in the slightest degree diminished. No local signs of irritation were produced, and its application was unattended with pain.

EXPERIMENT 2.—In the same case, on another occasion, we applied the liquid chloroform locally for ten minutes; the neuralgia was completely removed, but in addition, local irritation and diminished common sensibility resulted, as in our own experiments.

EXPERIMENT 3.—We applied a solution of equal parts of liquor ammoniæ fortior and water to the same case of frontal neuralgia locally, by means of lint in a bell-glass for ten minutes.

A sense of irritation, tingling, and heat, were experienced in about a minute after its application. Little or no relief was obtained, and the ordinary sensibility of the part was but very slightly impaired. This patient (who is a very intelligent woman) states that she has obtained the *most marked relief* from the local application of liquid chloroform, which she thinks far superior to Fleming's tincture of aconite. On looking over our clinical notes for the present session, we find that chloroform has been locally

applied as a therapeutic agent in five cases of neuralgia occurring in females, and in every case great relief has been afforded. We would further call attention to the fact in practical medicine, that the local application of chloroform and its vapour abrogates a neuralgia, while the normal sensibility is unaffected.

Professor Simpson mentioned to us that he had frequently made use of the vapour of chloroform to allay the extremely harrassing pain attendant upon carcinoma uteri; the remedy very often answered its purpose well, but could not, however, be implicitly relied upon, for its beneficial influence was found to be irregular; the reason of this has not yet been explained. Professor Simpson also bore testimony to the very good results obtained by the local application of carbonic acid in vapour to painful or ulcerated parts; and mentioned the desideratum, which yet exists, of obtaining carbonic acid in a solid form, capable of passing into vapour.

5. Ice as a Local Anæsthetic, introduced into Practice by Dr J. Arnott.

CASE 1. Patient admitted into Guy's Hospital, suffering from housemaids' knee. During her stay in the ward she fell; the bursa patellæ became acutely inflamed, tension increased, with throbbing, and pus had evidently formed in its cavity. A mixture of crushed ice and salt, in the proportion of two parts of the former to one of the latter, was accurately applied over the bursa, and maintained in that position for ten minutes. The skin became white, *but not painful*; assumed very much the appearance of bacon, and felt exceedingly indurated. The girl was very nervous, and covered her face apprehensively. Mr Davy (dresser to the case) made a free opening with the bistoury; and on his telling the patient that the necessary operation was over, she was much surprised and delighted, having experienced neither inconvenience from the application of the freezing mixture, nor pain from the incision.

CASE 2. Woman admitted into Guy's Hospital, suffering from strangulated femoral hernia, but without any urgent symptoms. Ice and salt mixture (as before) was locally applied over the tumor, and maintained for twenty-four hours. During this interval the usual unfavourable symptoms of strangulation occurred, and the taxis failing, the operation for reduction was at once proceeded with (no chloroform was given); Gimbernat's ligament was divided, the bowel returned, and a suture introduced. The necessary manipulations did not give the patient any pain whatever, and she made an excellent and rapid recovery.

CASE 3. Mr Duckworth had a condensed fatty tumour on the inner side of the left thigh. He determined to have it removed, and the operation was put into the hands of Mr Hakes of Liverpool. It was decided that a freezing mixture should be employed, before making the necessary incision and dissection. A lump of ice was placed on a board, and finely crushed under a glass roller. Four parts of this were stirred with the same quantity of common salt, and the whole (about two ounces) was put into a cambric hand-

kerchief, and applied over the tumour, and for a radius of three inches around. At first a feeling of cold ensued, followed by smarting and redness of the surface. The latter symptom, however, was traceable to an excess of salt in the mixture, and some more ice was added, which caused much more efficient action, and removed the smarting. The mixture was squeezed into a flat cake about three-fourths of an inch in depth. In five minutes sensibility was diminished, in ten it was almost abrogated. It was kept closely applied for fifteen minutes, when *the most perfect anæsthesia* was produced. No pain nor disagreeable sensation accompanied the application of the mixture. This is worthy of note, since it is generally alleged that the freezing of a part causes more severe pain than the subsequent operation which may have to be performed. An incision $1\frac{1}{4}$ inch long was made by transfixion, through the substance of the tumour down to the fascia lata. Half of the tumour leaped out; the remaining portion was dissected away with the bistoury and forceps, and some of the surrounding texture was likewise removed. Not the slightest sensation occurred, and it seemed magical to be assisting deliberately at the cutting of one's own flesh. Scarcely twenty drops of blood were lost. The edges of the incision were brought together by one suture, which, after the lapse of five minutes, *caused not the slightest sensation*. The wound healed very well, and no subsequent reaction nor trouble ensued. Certainly nothing could have been more successful than this; and the boon of being freed from the horrors of cold steel was considered no small one in this instance. It becomes a question therefore, whether employment should not be more frequently made of freezing mixtures, prior to *superficial operations* in surgery. Of course it can only be expected to act in superficial cases. In private practice it is especially a desideratum to abrogate pain, even in the minor operations; and in many of these the employment of chloroform by inhalation is hardly called for, or indeed warranted, since we find that statistics show a greater mortality to occur from the use of chloroform under these circumstances. We may here instance some operations which might be painlessly performed by this method:—

1. The operation for *onyxis*; the toe being surrounded by the mixture till anæsthesia be produced.

2. The removal of small superficial tumours. This division is a very comprehensive one, embracing the removal of malignant, cystic, benignant, and other growths.

3. The opening of abscesses; both acute and chronic when superficial; including anthrax and furunculi.

4. The operation for paraphymosis.

5. The operation for femoral hernia; it being a common practice to apply ice locally to facilitate the taxis.

In such cases we consider *ice* to be without doubt the most valuable form of local anæsthetic, from its admitting of simple application combined with the most satisfactory results.

ARTICLE VI.—*Case of Organic Stricture of the Œsophagus.* By
HENRY CANDLISH, M.D., House Surgeon, Alnwick Infirmary.

THE danger and magnitude of a disease may be most fitly estimated by keeping in view the tendencies to termination which characterize it, and the greater or less facility with which means can be had recourse to for its removal or amelioration. Measured by this standard, the case I am about to record is emphatically an important one. It was, as most of such cases are, insidious in its approach, gradual in its development, and fatal in its termination.

M. M., a respectable hard-working woman, had been in the habit, for a long period, of attending the dispensary in connexion with this institution, and obtaining medicines for herself and her husband, but had not complained to me of any uneasiness about the throat or difficulty of deglutition, till about the end of October 1861. She was then above 70, of a hale, healthy appearance for her years, and possessed of a considerable amount of spirit and energy. The symptoms at that time were not so serious as to have caused alarm. When she consulted me she complained of a sense of dryness and fulness at the back of the throat, which she imagined had resulted from a recent attack of cold, and which rendered deglutition at once uncomfortable and difficult. In consequence, she was obliged to be more than ordinarily careful in the selection and preparation of her diet, choosing those articles which could be swallowed with the least difficulty, and these, as far as possible, in a fluid state. Broth, gruel, sago, and soups were consequently the chief, if not the exclusive alimentary substances which she used.

At this time I examined her throat and found the soft palate in a very flabby, relaxed condition, as if it had been recently the seat of catarrh. The patient complained of no pain, and had only a sensation of discomfort and uneasiness when she swallowed anything. I prescribed an astringent gargle, ordered her to apply an occasional sinapism, gave her some alterative and aperient medicine, and requested her to call upon me again and let me know how she was progressing. About a week elapsed before she again called. She had done as I told her, but could not say that she was any better. I examined the soft palate, and finding it still in a pale atonic state, applied nitrate of silver freely to it, renewed the medicines, and desired her to continue their use, and when they were finished to call and let me hear the result. About the end of December she called on me again, and then for the first time directed my attention to what in reality was her chief source of trouble and danger. She said that she had often experienced a feeling of difficulty in swallowing farther down, which, although it had occasionally annoyed her, had never been so troublesome as of late. I requested her to lay her finger upon the part, and she placed it about an inch below the pomum adami. In answer to my questions, she stated that

a long time had elapsed since she first felt a tightness or constriction in the throat; she could not say the exact time, but she dared say it might be three or four years ago; that she did not tell me of this before as she was so much accustomed with it; and that it came and went a great deal.

The discomfort, difficulty, and pain in attempting to swallow had now become so great, that she had begun to feel anxious as to her condition. She said she thought it was her "thrapple," and that it had surely become very narrow of late. During this recital the idea of œsophageal stricture at once occurred to me. I prescribed for her iodide of potassium, with aromatic spirit of ammonia in a bitter infusion, and recommended her by no means to leave the house and expose herself to changes of weather, as she had so long done to her injury, and said that I would call and examine her case more fully in the course of the day. I also gave her croton-oil liniment as a topical application. When I visited her I examined the cervical region, both anteriorly and laterally, for tumours or enlargements of any kind, such as might exert a pressure on the gullet, and account for the dysphagia, but in vain, as nothing of the kind existed. I then proposed to pass a bougie or probang; but she declined, begging me to delay for a day or two to see if any change might take place. I desired her to continue the medicine and the croton-oil liniment, and left. After this she took to bed and kept it.

Any benefit which she derived from the medicine and liniment was but temporary, as a few days later she was evidently becoming worse, and attempts at swallowing were followed by severe shooting pains. Now, she had to receive any little fluid nourishment which she could be prevailed upon to take, by means of a teaspoon. As she did not sleep at night I directed her to take six grains of Dover's powder every evening at bedtime. From the use of these powders she felt somewhat soothed, and enjoyed a little rest. The case being now extremely urgent, and rapidly becoming more so, Mr Fender, honorary-surgeon to the Infirmary, and medical-officer for the poor, attended along with me, and, having examined the patient, confirmed my view of the case, and insisted upon the propriety of examining the gullet by means of the probang, which would show to what extent stricture existed, and whether anything could be done for her relief. The patient having assented to the introduction of the instrument, Mr Fender oiled and slightly bent it, and with the most gentle pressure slid it down till its farther descent was prevented at what we anticipated to be the seat of stricture. Wishing to give it the opportunity of dilating, the extremity of the instrument was slightly raised and then re-applied, and brought to bear against it with a force very little more than the weight of the probang. No appreciable progress, however, could be made, as no dilatation of the stricture was effected. Before the probang was withdrawn, I took

it into my hand and made a steady gentle pressure, but found that the resistance offered was so great, that any effort short of proving dangerous to the walls of the tube could not overcome it. As the support which the patient received by the teaspoon was confined almost exclusively to wine, beef-tea, and milk, and as she was rapidly losing in condition, she was ordered nutritive enemata. A blister was ordered to be applied to the throat for twelve hours. When we called next day she expressed herself somewhat better since the introduction of the instrument and the application of the blister. Her appearance, and the persistence of the stricture prevented us from giving undue weight to her statement, or from indulging in vain hope of her recovery; and, lest we might exhaust still further her little remaining strength, we refrained from setting her up in bed, in order that the passage of an elastic catheter might be tried. In diagnosis, Mr Fender and I were agreed; in treatment, we were also of one opinion, that so far as an operation was concerned no surgical interference was advisable. Our prognosis was most serious; indeed, so far as we could judge, the result must be fatal. We felt that meagre though the measures we had been adopting were, and insufficient as they would prove for her recovery, we were not justified in recommending a dangerous operation in the face of the uncertainty as to the nature of the contraction and the extent to which it had advanced; and, considering the age of the patient and the results of œsophagotomy in similar cases, we were satisfied that caution was more commendable than rash zeal, and resolved to support the system so long as we could, and leave the issue to nature. Although support was administered regularly in the ways and of the kind mentioned, yet emaciation rapidly advanced, the strength gradually failed, and the patient sank, her mind being clear to the last.

The fatal result in this case was, no doubt, greatly accelerated by the repeated colds which she had had during the existence of the disease, and more especially did it receive an impetus from the recent attack of inflamed fauces to which I have referred. Permission having been given to Mr Fender and myself to examine the neck, we commenced our incisions on the left side and made a careful dissection, exposing the larynx and pharynx, which, with part of the trachea and œsophagus, reaching to the upper border of the manubrium, we excised and examined. All the superficial parts were healthy; the larynx and trachea were quite natural. A tube was passed along the pharynx till at length it was arrested. It was kept *in situ*, and a scalpel was pushed through the cricothyroid membrane transversely, till it came directly into contact with the extremity of the tube. They were then precisely opposite each other. This much being determined, the pharynx was laid open by a longitudinal incision, which was continued till the stricture was fully exposed. On examination we found that it embraced the upper inch of the œsophagus, which, although of a dark ashy

appearance, was tough and strong in consistence, and in texture bore a closer resemblance to yellow fibrous tissue than to the rest of the tube. There was neither ulceration nor sacculation above or below this in the part before us. The stricture was funnel-shaped, the wide part being uppermost. This led to a short narrow neck, which might be of the diameter of a crow-quill. Farther on, the gullet was normal in structure, but in size was so narrow as to resemble a large sized earth-worm. The result of the examination was most satisfactory to us, confirming, as it did, our views of the case, and establishing beyond doubt the correctness of our decision as to the impropriety of surgical interference. Perhaps, had the true state of the case been brought under our notice before the recent aggravation which it underwent, the regular introduction of a bougie, a course of calomel and opium, followed by the exhibition of iodide of potassium, with the external use of stimulants and discutients, and the introduction of support by means of the stomach-pump, might have had the effect of retarding, if not preventing a fatal issue.

Before concluding, I would allude in a sentence or two to the principal points suggested by this case.

1st, There can be little doubt that the disease which eventually proved fatal existed in a latent state for a period of three or four years. 2d, The fact that at times it caused greater annoyance than at others may be explained by the supervention of spasm in the vicinity of the stricture. 3d, The connexion existing between catarrhal affections of the fauces and stricture of the œsophagus is clearly established, and enforces the propriety, in such instances, of avoiding exposure to cold, particularly at an inclement season or in unfavourable weather. 4th, Some diseases termed latent, by the observance of great care and precaution, and by timely advice and treatment, may be cured, relieved, or kept in abeyance, which, should sanitary observance be disregarded, and circumstances favourable to their progress exist, may assume a most speedily fatal character. 5th, Although cases may be found in which, from the localised nature of the stricture, œsophagotomy may be followed by the best consequences, in this case, from the extent of the stricture, had that operation been performed, it would have been attended by an unfavourable result.

ARTICLE VII.—*The Progress of Ophthalmology: a Sketch.*¹ By D. ARGYLL ROBERTSON, M.D., Lecturer on Diseases of the Eye, Edinburgh Medical School.

RAPID as has been the advance of all departments of medicine during the last thirty years, in none has this been more manifest

¹ The substance of this communication constituted a main part of an introductory lecture to a course on diseases of the eye.

than in that of diseases of the eye. As the introduction of the microscope led to a closer investigation of the structure of the body, and of auscultation to the exploration of disease in organs previously regarded as beyond our powers of observation, so the ophthalmoscope has opened up a new field for study and research in ophthalmology. But, after all, the invention of this invaluable instrument marks merely an epoch in the study of this science, for many important advances had been made before and some have been effected since it came into use. It is the object of this short paper to show in outline how our knowledge of this department has been developed and improved, how errors once dominant have yielded their place to truth, and how, from a vague and confused foundation, an enlightened science has gradually arisen.

The science of medicine was first divided into distinct departments by the ancient Egyptians, and to such an extent do they appear to have carried their process of division, that each important organ of the body was the subject of special study and practice, and thus they had their aurists, oculists, liverists, etc. Little advance appears to have been made by them in any department,—owing, most probably, to their ignorance of anatomy and pathology, and to the fact, that the knowledge they possessed was regarded as the private property of families, and transmitted from father to son.

The Greek, Roman, and Arabian surgeons considered the study of ophthalmic diseases an important part of medical education; and, consequently, we find that they possessed an extensive knowledge of diseases of the eye, as is proved by the accuracy of their descriptions. Celsus, for example, who wrote in the first century, describes most accurately almost all the diseases of the eyelids with which we are at present acquainted; and, among affections of the eyeball, pterygium, a disease in which a triangular portion of conjunctiva becomes thickened and vascular, is most minutely described; as is also the operation for its removal, which is almost identical, in all its details, with the method of operating to which we have recourse at the present day. Although ignorant of the precise seat of cataract, the nature of the disease otherwise appears to have been very well understood, and the performance of an operation for the removal of the opaque matter from the axis of vision seems to have been of frequent occurrence. Rules were laid down by which the cataracts favourable for operation might be distinguished from those in which a good result is less to be expected. A strict regimen was carefully enjoined for some time prior to the operation; for Celsus recommends that the patient should take a small amount of food, and drink only water for some days before the operation, and during the last twenty-four hours should abstain from all food,—an antiphlogistic system that would meet with but little favour in the present day. He also carefully considers the details of the operation, which, in every respect, correspond to those of depression as practised before the method by reclinatio was introduced. Should the

cataract resume its former position, he recommends it to be cut to pieces, and states that thus it can be more readily displaced.

From this time the study of diseases of the eye appears to have been almost entirely neglected, until the seventeenth and commencement of the eighteenth century, when we find the department in the hands of itinerant quacks, who reaped a rich harvest from the possession of some supposed specifics. They were at first content to trumpet forth their own fame from the stages in front of the booths in which they practised; but, later, they circulated a knowledge of their powers and achievements by means of laudatory pamphlets, not unlike those issued by some irregular practitioners of our own day. Indeed, with very few exceptions, it was not the advancement of their department of medicine, but the spreading of their own fame, that they were most anxious to promote; and, as a natural consequence, pretensions the most extravagant, and a spirit of opposition to the profession at large the most unbecoming, characterized the productions of the oculists of that period. Their writings, indeed, evidence that they were continually engaged in professional squabbles alike mischievous and undignified. The following epigram from the preface to a treatise on Cataract and Glaucoma, by Woolhouse, published in 1717, is a specimen of the manner in which their works were made the vehicles of abuse and recrimination:—

“ Quid sunt falsa novis systemata fulta columnis?
Mentis abortivum sunt titubantantis opus.
Brisseus, Antonius nobis dant talia, docto
Ut sibi concilient nomen in orbe novum:
Cæcutire tamen libet his; ast, orbis ocellus,
Scit cæcis visum reddere Wolhusius.”

This same preface—which, however, it is but right to say, was not written by Mr Woolhouse, but by a Dr Christopher le Cerf—contains, moreover, the following characteristic laudatory passage:—“ Quis autem nescit Woolhusium ab adolescentia sua tot mille cataractas et Glaucomata depressisse? Ac proinde ipsum ophthalmiatrorum Europæ principem esse?”

Perhaps the most remarkable of the oculists who practised during the first half of the eighteenth century was “the Chevalier John Taylor,” whose excursions appear to have extended over almost every part of Europe; he, moreover, published works wherever he went, in English, French, Russian, Danish, etc., in which all his titles are carefully enumerated, and his claims as an oculist set forth in a most exaggerated strain, accompanied by testimonials from many distinguished professors of the age, and by allusions to the fact that “several of the most illustrated personages in Europe had happily passed through his hands.”

A point much disputed by the oculists of this period was whether cataract consisted in an alteration of the aqueous humour, by which an opaque membrane was formed occluding the pupil, or in an

alteration in the structure of the lens. It is obvious that, under the term cataract, those authors included not only opacities of the substance of the lens, but also deposits upon its capsule, and thus the cases of cataract reported to have been cured without operative interference may readily be accounted for. The operation of couching for cataract seems to have been very extensively practised; and spring and autumn were considered the only proper seasons for its performance. Duddell, however, who published a small work on some diseases of the eye, at the commencement of the eighteenth century, states that the reason why they restricted the operation to those seasons was, because they were the most convenient for the itinerant practitioners of the art to travel in. It further appears, from the following extract from his work, that females practised and obtained a reputation for couching cataracts:—"About five years since, I saw a woman in Holborn, by King's Gate Street, that had a dissolution of vitreous humour in her right eye, a narrowness of the inward chamber, and immobility of the pupil, and half was dilated. The crystalline was opaque, and shrunk in its bigness, pressed against the lower part of the pupil, and was of a whitish gray, by reason of the fibrous parts of its crooked and contracted segments, so that she could not perceive any light with that eye. She asked me if I could do her any good? I told her there was no hopes; for she could not see the least glimmering, because her cataract was accompanied with a gutta serena, which was perfect. She told me that Mrs Jones, a famous woman for couching of cataracts, would have couched her some years before. I suppose in hopes of success, which quacks are wont to promise themselves, notwithstanding their want of knowledge to conduct them." A curious device for diminishing the amount of light admitted to the eye, had recourse to by Duddell in a case of cataract on which he had operated, consisted of a walnut shell, with a small hole drilled through the centre; this was kept applied over the eye by means of strings fastened to each end. This exactly resembles in construction the metallic plate with small central aperture lately invented by Professor Donders, and at present employed in certain cases of opacities of the cornea, conical cornea, etc., with the view of preventing all but the most parallel rays from entering the eye. Much space is occupied with discussions as to the correct application of terms, and with speculations as to the nature of affections described under various designations by different authors. Some of these appear to have been applied in a very confused manner, and to affections with the nature of which the writers were quite unacquainted. This is illustrated by the following extracts from Duddell:—"The cataplexia of the eye which Hippocrates speaks of is, when the eye has lost all sort of movement and sensation of light, which happens in epilepsies and in great surprises and frights. Some call this the conick movement, which is the parrexis, or helcosis, and abrupton, precision, or ulceration,

and solution of the continuity of the optic nerve, caused from a stroke, wound, or sudden fall of humours or apostimation ;” and again,—“ The syntosis of Galen, or syntomasis, is a collaption, compression, flabbiness, or narrowness of the said nerve, which is affected by dryness or atrophy.” It is amusing to observe how coolly they decide as to the exact pathological nature of these affections, although they had no opportunities for testing the truth of their hypotheses.

The troublesome affection termed granular lids was well understood at that time, and a plan of treatment pursued similar to that of the present day. A favourite remedy with some of the oculists of that period was a scarificator made of beards of barley, tied together in the shape of a little brush ; and, among other applications in common use, we find viper’s fat, the gall of fishes, particularly of the eel and pike, a mixture of ants and honey, the juice of goose’s dung, and the insertion of a living louse, “ which tickleth and pricketh, and rendereth the eye moist and rheumatic.”

It was only about the middle of the eighteenth century that the attention of the profession at large was directed to this department, by the able works of Zinn, Haller, and Richter, in Germany, on the anatomy and surgery of the eye, and of Porterfield in this country, on the manner and phenomena of vision. The subject was now thoroughly taken up at the different medical schools in Germany, and to them we are chiefly indebted for the remarkable progress this branch of our profession has made from that time to the present day. The establishment of the Vienna school of ophthalmology by Barth, in 1773, was an important step towards placing this study in a correct relation to the other departments of medicine and surgery. He delivered lectures on ophthalmic surgery in connexion with the university of Vienna, and had certain wards set apart in the General Hospital, for the reception of cases, whereby his lectures were illustrated. He was thus the first to institute a course of systematic lectures, combined with practical clinical instruction,—a combination by which alone a satisfactory acquaintance with any department of medicine can be obtained, and for which Germany has continued even to the present time to be deservedly famous. Although Barth did not add much to the literature on diseases of the eye, his name deserves to be carefully recorded for his strenuous and successful endeavours to wrest the subject from the hands of mercenary quacks, and raise it to its proper position among the branches of our profession. The medical schools of Germany, Italy, and England, now investigated the subject with great spirit, as the rapid advancement made at the commencement of this century amply testifies. Scarpa, in Italy, in 1801, published an excellent treatise on diseases of the eye, which, translated into English, continued for many years to be the best manual on the subject. Beer, in 1815, published an elaborate work, the result of his extensive ophthalmic experience, in which we meet with most

accurate descriptions of the various affections of the eye, and which established his great reputation ; but the absurd extent to which he subdivided these diseases, and his tendency to refer them all to some constitutional origin, were serious drawbacks to the practical utility of his work.

Mr Saunders deserves the credit of having founded the study of ophthalmology in England. In 1804, he established in London an institution for the cure of diseases of the eye and ear. It was soon, however, found expedient to limit the charity to the former class of diseases ; and at the present time, under the name of the Royal London Ophthalmic Hospital, it ranks as one of the largest, if not the largest, ophthalmic hospital in the world. Mr Saunders was the first to recommend operating for cataract in infants, pointing out clearly the great advantages resulting from its early performance—viz., that the operation is quite as successful, if not more so, than when it is delayed, and that the rolling motion which eyes affected with congenital cataract are so apt to contract, disappears if the operation is performed in infancy. He also published some excellent papers on Iritis, on the cure of inversion of the upper eyelid, and other subjects connected with this department.

At the commencement of this century a terrible epidemic of ophthalmia occurred throughout Europe. It commenced among the English and French troops stationed in Egypt, and thence it spread throughout Europe and continued for many years prevalent in the English, French, Italian, and Austrian armies. Some idea of the severity of the disease may be obtained from the consideration of the fact that in the year 1818 there were upwards of 5000 blind invalided soldiers in England. No doubt it existed previously, but it was not till this time that it attracted the attention of surgeons, and thus it has received the name "Egyptian ophthalmia," from the place in which it was first observed. The virulence of this affection, and the extent to which it spread, served to direct the attention of surgeons at home and abroad to ophthalmic diseases ; and, doubtless, the great advance that was made in this branch of the medical profession at the beginning of this century, was in part due to the occurrence of this dreadful scourge.

From this period ophthalmology rapidly progressed, institutions for the cure of diseases of the eye were established in all the larger towns, and a systematic course of lectures delivered in connexion with some of the medical schools. In 1817, a course of lectures on the anatomy and diseases of the eye was commenced in London by Mr Guthrie and Dr Forbes. The lectures delivered by Guthrie formed the substance of his work on the Operative Surgery of the Eye, published in 1823, undoubtedly the first work in the English language in which an accurate and complete description is given of those affections of the eye which require operative interference, and of the different methods of operating then in use. In the preface to his work he states, that "previously to the year 1817,

no lectures were delivered in Great Britain on the diseases of the eye, unless the concise observations which were made in the schools of anatomy on some of the operations be considered as such." This observation, however, is not absolutely correct, as, about the year 1759, the Chevalier Taylor delivered a systematic course of lectures on diseases of the eye at Edinburgh. Guthrie, nevertheless, undoubtedly deserves the credit of being the first to institute in Great Britain an elaborate and complete annual course of lectures on the surgical diseases of the eye; and to him we are greatly indebted for the stimulus he thus gave to the study of ophthalmology. The able treatises of Lawrence, Tyrrell, Middlemore, and Mackenzie, which soon after appeared, served greatly to raise the British ophthalmic school. In Germany, contemporaneously, the journals of Graefe and Walther and of Professor Von Ammon, were the means of promoting the scientific advancement of this subject; while the works of Rosas, Juengken, and Arlt, all exhibit an amount of patient observation and research, for which the natives of that country are so pre-eminently distinguished. This short sketch serves to bring the history of this department to within the last twenty-five years: some of the more important improvements that have been made during the last quarter of a century, I propose to consider a little in detail.

In 1838, Dr Stromeyer (of Hanover), in his work on orthopœdic operations, suggested the division of the tendon of the contracted muscle as a means of curing squint. This suggestion was adopted by Professor Dieffenbach of Berlin; and the results obtained by the operation were so favourable that it soon became established as a favourite means of cure. But, as is always the case when a new remedy is introduced to the notice of the profession, this operation was applied to numerous cases to which it was utterly inapplicable; for squinting may as well be caused by paralysis of the one muscle as by too contracted a condition or over-action of its antagonist; and as these distinctions were quite overlooked by many of the earlier advocates of this operation, it happened, in some instances, that although immediately after its performance the cure appeared perfect, the paralyzed muscle, regaining its wonted tone, induced squinting in the opposite direction; so that a patient who at first squinted inwards (the most common form of strabismus), shortly after the operation squinted outwards, and thus a greater deformity than the original condition was induced. But this operation must not be looked upon merely as a means of curing a deformity, but also as a means of preserving vision; for, in most cases of long-standing strabismus, the misdirected eye suffers, the retina becoming more and more insensible, until sometimes but little vision remains. Thus it was demonstrated that by a very simple operation not only can a deformity be removed, but also a danger to vision be averted.

In 1846, Mr Cumming, in a paper on the "Luminous appearance

of the human eye," describes how a view of the interior of the living eye may be obtained. He observes—"The only circumstances necessary for observing the interior of the eye are, first, that the eye must be placed at some distance from the source of light, the distance being greater according to the intensity; second, that the rays of light diffused around the patient, and sometimes around the eye itself, be excluded; and, third, that the observer occupy a position as near as possible in a direct line between the source of light and the eye to be examined. Let the person to be examined sit or stand eight or ten feet from a gas-light, looking a little to the side; then approach him in a direct line, and at once will be seen the reflection of the bottom of the eye."—"On approaching within a few inches of the eye, the reflection is not visible; for before the eye of the observer can be brought within range of the reflected rays, the incidental rays of light are excluded." This, undoubtedly, was the first glimpse of that great discovery by which the obscurity and mystery enveloping the deep-seated diseases of the eye has been dispelled.

Professor Brücke of Vienna, and Helmholtz of Heidelberg, now devoted their attention to this point; and, eventually, Helmholtz, in 1851, was amply rewarded by the discovery of an instrument whereby the interior of the living eye could be distinctly viewed. His instrument at first consisted simply of a plate of glass, whereby the light from a lamp was reflected and directed through the patient's pupil, part of the returning rays passing through the glass-plate were received into the observer's eye, and there formed an image of the interior of the patient's. This instrument was termed the ophthalmoscope, and is now, in various forms, in general use among all the intelligent practitioners of this branch of medicine. The form most usually employed is that of a concave mirror with a small central aperture; by which contrivance more light can be thrown into the eye, and thus a clearer view be obtained. But this instrument was not introduced into practice without encountering great opposition, more especially at the hands of some oculists of this country, who opposed its use on the ground that, in cases of deep-seated disease, the exposure of the eye to such an examination would be followed with bad effects. This is, no doubt, a valid objection in some forms of acute inflammation of the retina, more especially when the observer is not practised in the use of the instrument, and thus requires to subject the patient to a prolonged examination; but, in the majority of cases requiring ophthalmoscopic investigation, the retina, so far from being more than ordinarily sensitive to the action of light, is, on the contrary, impaired in its sensibility; and in these cases no evil effects are known to follow even a lengthened examination. It is much to be doubted whether half an hour's percussion or auscultation is of much benefit to a patient labouring under inflammation of the lungs; but no one ever thinks of taking exception, in ordinary cases, to the brief but satisfactory

examination required by the practised physician. No more can we object to the use of the ophthalmoscope in experienced hands, unless in certain cases of very rare occurrence. But some there still are who oppose it on the ground that no benefit is derivable from its use. The futility of that objection is proved by the services it has already rendered in enabling us to distinguish the various diseases which, under the term Amaurosis, were formerly enveloped in obscurity, to classify them according to the structure involved and the nature of the affection, and to form a correct prognosis as to the result. By it, moreover, we are enabled, in cases of malignant disease of the eyeball, to diagnose its presence ere other tissues of the orbit become involved, and by timely operative interference to remove the disease with some prospect of success. In cases of cataract in the incipient stage, it enables us to ascertain with certainty whether any complication is present, which, when the cataract came to be operated on, would compromise the result. The value, indeed, of this invention, in relation to ophthalmology, cannot be over-estimated, not only as affording an instrument by which our diagnosis can be rendered more accurate, but also as a means whereby the action of remedial agents on diseases of the inner tunics of the eye can be most readily investigated. The normal and abnormal appearances presented by the deep-seated structures of the eye, as observed by means of the ophthalmoscope, have been made the subject of works by Jaeger, Ruete, Pilz, etc., in Germany, not omitting Liebreich, the author of the introduction to the French edition of Mackenzie's work; Follin, Sichel, etc., in France; and Hulke, Bader, Hogg, etc., in this country.

The invention of the ophthalmoscope was rapidly followed by that of an instrument by which the curvatures of the cornea, and anterior and posterior surfaces of the lens, could be measured. To it the term ophthalmometer was applied by Helmholtz its inventor. It has been applied, with great success, to the determination of the changes whereby the eye is enabled to bring rays of different degrees of divergence to a focus on the retina. This, Helmholtz has demonstrated, is accomplished by an alteration in the curvature of the lens, more especially of its anterior surface. Shortsightedness, which was, and even is frequently supposed to be usually caused by an increased curvature of the cornea, was by means of this instrument proved to be generally the result of an abnormal convexity of the lens. Other points of great interest have been investigated by its aid; but from its complexity of construction, and the amount of practice required ere results can be obtained, it has been very little used, except by one or two scientific observers, and may as yet be considered quite inapplicable to general use.

In 1856, Professor Graefe of Berlin directed the attention of the profession to the operation of iridectomy, as a curative measure in certain cases of recurrent inflammation of the iris, which, when unchecked, gradually implicated deeper textures, and ultimately led to loss of vision. From its great success in these cases, he was

led to its employment in glaucoma, and was struck with the beneficial effects that followed its adoption; and, upon further investigation, he became convinced that in certain cases of that disease a cure could almost with certainty be thus effected. These views he communicated—along with an elaborate investigation into the nature and course of the disease—in a series of papers, which have been translated into English, and published by the New Sydenham Society. These views were at first strongly opposed by most of the oculists both of this country and the Continent; but this chiefly arose from the fact that the operation was applied to cases to which it was quite inapplicable, or performed in a manner different from that recommended by Professor Graefe. Now, however, with very few exceptions, all who have had opportunities of testing it, are satisfied that in it there has at last been found a remedy for a disease, the treatment of which, as recommended by an author little more than twenty years ago, was, on the patient's part, to bear,—on the surgeon's, to forbear. At the same time, it must be borne in mind that this operation is of greatest advantage in the earlier stages of the disease, and that to excise a portion of iris, in a person already stone-blind, can never restore the lost function; and here we have another noble illustration of the practical value of that instrument, by which we are in many instances able to trace its earliest development.

Prior to the discovery of the ophthalmometer, no definite knowledge existed as to the means by which the refractive media of the eye could be so altered as to enable rays of different degrees of divergence to be in turn brought to a focus on the retina. Little further, indeed, was known, than that in some persons the refractive power of the eye was abnormally great, and in others abnormally small; in the former case, concave glasses were found serviceable, in the latter, convex. It remained for Professor Donders of Utrecht thoroughly to investigate this subject, and to place it on a scientific basis. He classified eyes into the normal or emmetropic, the short-sighted or myopic, the presbyopic, and the hypermetropic. The normal eye he defines as one which can see from an infinite distance up to within eight inches from the anterior surface of the lens; the myopic as one which, from too great a refractive power, is unable to see distant objects distinctly; the presbyopic as one which, from too small a refractive power, is unable to see objects distinctly except beyond eight inches from the eye; the hypermetropic as one which is able to see distant objects distinctly through a convex glass. He supplied data by which the degree of the affection of accommodation could be reckoned, and in accordance with which, suitable spectacles could be chosen. He also pointed out, that in very many cases the troublesome affection termed *hebetudo visus*, or *asthenopia*, was dependant upon the existence of hypermetropia; and that, upon the use of suitable convex glasses, the distressing symptoms disappeared. His views have been recently laid before

the profession in this country, in an able work by Soelberg Wells.

It would extend this paper to too great a length were I to record all the advances that have been made within the last few years, and I must content myself with merely referring to the laborious researches of Von Ammon into the development of the eye, and its congenital malformations ; to Dr Alfred Græfe's able monogram on the affections of the muscles of the eyeball ; to Professor Von Graefe's valuable observations on almost every subject connected with ophthalmology ; and to the investigations of Bowman, Hulke, Bader, etc., in this country.

I have thus shortly traced the development and progress of this interesting subject ; and from its consideration a forcible example is adduced of the truth of the statement, that as our knowledge increases, the greater appears our former ignorance. Doubtless in future years the ophthalmology of our day will appear as crude and unsatisfactory to our successors as the views and practice of Duddell, Taylor, etc., are to us ; but, at all events, those recent discoveries to which I have thus cursorily alluded have inaugurated a new era in the history of the department, and will bear me out in the statement that, within the last quarter of a century, no department of our wide profession has progressed so rapidly.

Part Second.

REVIEWS.

Minutes of the General Council of Medical Education and Registration for 1862.

AN observer of the proceedings of the Medical Council, from its first institution until the present time, who would take the trouble to strike a balance between its cost and its results, might well adopt the exclamation of Prince Hal on the discovery of the fat knight's tavern bill—" Oh, monstrous ! but one halfpenny-worth of bread to all this intolerable deal of sack ! "

We were never great admirers of the Medical Act. It was a makeshift and an expedient ; it did little more than relieve Parliament of what had become an intolerable nuisance—the perpetual cry for " Medical Reform ; " it transferred all the professional jealousies and squabbles to another tribunal,—the Medical Council ; and, in doing this, it withheld from that body any real and efficient power for composing those strifes by which the medical profession had long been torn asunder.

It did, however, and for that let us be ever grateful, destroy all exclusiveness of practice; and it declared, that a man who was qualified to watch over the health of the lieges north of the Tweed, might equally be trusted to do so on the south, or even within the magic circle of seven miles round London.

On the second day of its first meeting (24th November 1858), the Council fixed that the fee for registration to be paid by all those qualified before 1st January 1859, should be £2 sterling; and for those qualified after 1st January 1859, £5 sterling.

According to the Returns laid before Parliament in 1860, the Medical Council had realized, as the result of this, £34,511, 10s.

The English Branch Council had invested £20,000, the Scottish £2000, and the Irish £3120, 8s. 2d. The fees and travelling expenses of the members for meetings in that year amounted to £3286, 10s.

In 1861, the receipts from fees amounted to £3204, 10s. The expenses of meetings were £1794, 9s.

In 1862, the receipts from fees amounted to £4017, 15s. The expenses of meetings were £1821, 15s. The English Branch Council had invested another £1000, and the Irish Branch had realized £611, 9s. 2d. of the sum formerly invested by it.

The expense of the Council meeting, say for a seven days' sederunt, is as nearly as possible £185, 15s. per day, or about £46, 5s. per hour.

Surely, for sums so large, wrung from the anticipated earnings of a hard-worked and not overpaid profession, some very tangible benefits should be displayed.

Not that we by any means think the cost excessive. Many of the members of Council enjoy extensively the confidence of the public in their respective districts, and the remuneration which they receive for attending the meetings of Council is of the most meagre description. We are, however, entitled to inquire whether the results that have followed are fitted to recompense the members of Council for their loss of time, and the members of the profession for the large pecuniary demand made upon them?

The objects which the Medical Act was avowedly intended to accomplish were:—

1. Equal privileges of practice.
2. Equal excellence of education.
3. Equal stringency of examination.
4. The extrusion of unworthy members from the profession.
5. The publication of a national Pharmacopœia.

Beginning with the last of these, we may congratulate the profession and the public that, after four years' labour, this great national work is reported as complete, and in great part ready for the press.

It appears, however, that the Medical Act, which seems to have been complete in no one part, while enjoining on the Medical Council the publication of a Pharmacopœia,—a work necessarily

involving enormous trouble, and very great expense,—made no provision to enable the Council to make contracts for its publication; so as to secure that body from the risk of pecuniary loss or piracy.

Further, in Ireland, the Dublin Pharmacopœia, published by the College of Physicians, is by statute the standard for that country; while, by an order of the Privy Council, the London Pharmacopœia is the standard in England. No section repealing these provisions was introduced into the Medical Act; so that pharmaceutic chemists, apothecaries, and all others will be still entitled to regulate their processes by the last edition of these works.

Becoming awake to these facts at the eleventh hour, the Pharmacopœia Committee have meanwhile delayed its publication; and the Council, by a deputation to the Home Secretary, endeavoured to induce Government to bring in a bill to remedy these defects in the Medical Act. As yet we have seen no mention of such a bill having been introduced into either House of Parliament; and it is evident that at this late period of the session, there is little chance of such a measure becoming law unless proceeded with immediately; so that there is every probability that another year may elapse before the work goes to press.

We are sorry to observe that very important changes are to be made in the system of weights and measures. According to these changes, the drachm and grain will be about one-eleventh less in weight than they were, while the drachm will be nearly double, and the grain about an eleventh less than the drachm and the grain of the imperial standard.

This will give rise to a good deal of confusion at first, although ultimately it will be of benefit, as the drachm will now be the 8th part, and the grain the 480th part of the ounce.

The alteration of the nomenclature will also involve no little trouble on the publication of the new Pharmacopœia, as also will the alteration of the strength of various well-known and commonly-used preparations. Both these changes were, however, imperatively necessary, from the varieties which existed in the names and strength of preparations containing the same ingredients, as ordered in the three Pharmacopœias. One great improvement has been effected in this department, by “so framing the formulæ for the preparations and compounds that all articles under one Galenical form should admit of being fitly prescribed in the same dose. Difficulties of detail have prevented this convenient system from being carried out to the full extent; but it has been attended to as far as possible, and increased facility in prescription will be found to have been thus attained.”

We wish any evidence had been afforded in the admirable Report of the Pharmacopœia committee, which is printed in full in the first day's proceedings of the Council (14th May 1862), that the attempt to make medicines more palatable had engaged their attention.

This may seem much too small a matter to have engaged the attention of such learned Pundits, but we can assure them that the nauseous and repulsive character of many of our drugs was one cause of the favour with which at one time homœopathy was received. Many of the most disagreeable tastes are capable of being concealed or disguised,—a fact which seems to be utterly ignored in our Pharmacopœias, which appear to have been drawn up by persons having a profound contempt for the little weaknesses of humanity,—antimony, for example, which is a nearly tasteless drug, is made absolutely nauseous in antimonial wine, and numerous other examples of a similar kind might be adduced.

Having thus done full justice to the labours of the Medical Council in this department, we may be permitted to inquire whether the task assigned to it would not have been as well performed by the Colleges without its intervention, and whether, had the Medical Act enjoined that instead of three Pharmacopœias, one for each division of the kingdom, there should in future be but one of a national character, the Colleges would not have united for the production of one worthy of the name. Indeed, the Council was compelled to avail itself of extraneous assistance; and while, of course, it was fortunate in having in its own body such men as Christison, Apjohn, and Williams, it may be doubted how far the task would have been completed without the aid of Neligan, Maclagan, Seller, Garrod, Farre, and Squire.

Another point which we indicated as an object of the Medical Act was the removal of unworthy members of the profession from the Register. Various powers are conferred on the Council in this respect by the Medical Act.

1st, By Section xxviii. the General Council may order the removal from the Register of the name of any practitioner who has been deprived of the qualification on which he registered by the College or Body by which that qualification was conferred.

2d, Any registered practitioner convicted in England or Ireland of felony or misdemeanour, or in Scotland of any crime or offence, may have his name removed from the Register.

3d, Any registered practitioner, who may, after due inquiry, be judged by the General Council to have been guilty of infamous conduct in any professional respect, may have his name erased from the Register.

All these powers have been exercised by the Council in past years; but, during this session, the Council adopted the report of a committee appointed to consider the question, to the effect that the Council should not take part as prosecutors against persons accused of infamous conduct in a professional respect, but should sit as judges on prosecutions conducted either by individuals or public bodies.

The propriety of this is obvious. No doubt the Council is empowered by the Medical Act to act both as prosecutors and

judges, but the law always regards with extreme disfavour the union of any two such offices ; and the Council assuming this double character undoubtedly told against it in the case of Richard Organ, whose name was restored to the Register by a writ of mandamus after it had been struck off by the Council. Ultimately, indeed, the Council was successful in effecting the removal of his name from the Register, but not until there had been great expense incurred and great annoyance experienced from him and his legal advisers.

For the future, the various colleges and registration associations who have interest in preserving the purity of the Register can prosecute such parties before the Medical Council, which will then act purely as a court of inquiry in the case.

It will be well for bodies undertaking such prosecutions to be aware that the Council, in 1861, laid down certain regulations regarding them, which are contained in chapter viii. (page 10) of the Standing Orders.

All complaints are to be made, in the first instance, to the Branch Council of that part of the kingdom where the accused may reside. The Branch Council are to take the evidence and send a statement of it to the Register one month before the meeting of the General Council.

The Registrar may take a legal opinion, and, provided it be in favour of proceeding, may summon the accused to attend the meeting of the Council.

In the event of the legal opinion being against proceeding, the case shall be remitted to the Branch Council, with which it originated, to deal with as they may see fit.

At the same time, in order to facilitate the removal from the Register of the names of those who have been convicted in England or Ireland of any felony or misdemeanour, or in Scotland of any crime or offence, power was given to the Executive Committee to discharge the functions of the Council in this respect. This seems right and proper. To the Executive Committee has been intrusted from the first the superintendence of the publication of the Register, and in the discharge of that duty it seems to be the most proper body to remove from that Register the names of those who have been convicted of crime. The only decision vested in them is not the innocence or guilt of the party accused, nor even the nature or effect of the crime of which he is accused, but simply whether the evidence (usually a certified extract from the decision of the Court) is sufficient to prove his conviction. In such cases the sooner the name is removed from the Register the better, and without some power of the kind being intrusted to the Executive Committee, in default of a meeting of Council between the conviction of the offender and the publication of the Register, his name would again appear among legally qualified medical practitioners.

A curious question connected with this suggests itself to us. Suppose such a man were, at the termination of his sentence, to

present himself for examination before any of the licensing bodies, and to produce evidence of having complied with all their requirements, would that body, even supposing it to be acquainted with the previous history of the applicant, which might or might not be the case, be entitled to refuse to take him on trial? Having taken him on trial, and he having satisfied it touching his knowledge, would it be entitled to refuse him its diploma? And, supposing he thus obtained his diploma, would any of the Registrars be entitled to refuse his name re-admission to the Register? These are questions which should be considered by the Council in regard to the new Act of Parliament for which it is proposed to apply.

We believe there is nothing in the actings of the Council which has so much disappointed the profession in England as the reluctance of the Council to conduct prosecutions. South of the Tweed the great desire was for a Medical Act to put down quackery,—a thing impossible to be obtained, and, in the present temper of the House of Commons, not very safe to be asked. It was considered quite enough to declare, as the Act does, that only those registered were to be considered as legally qualified medical practitioners, or entitled to hold public medical appointments.

It was reserved, however, for the genius of a Scottish sheriff to decide, that in the case of a severe injury the knowledge of a professed bone-setter was superior to that of the President of the Faculty of Physicians and Surgeons of Glasgow. It seems the peculiar function of this amusing legal functionary, on the one hand to make political vaticinations which never are fulfilled, and on the other to give oracular judgments which uniformly are reversed; nor was the one we have alluded to singular in this respect.

Speaking of the Register naturally leads us to a subject which seems annually to engage the attention of the Council, without any apparent beneficial result—the small demand for copies of that publication. The original blunder into which the Executive Committee of the Council fell, was undertaking to be their own publishers, and from the effects of this error they have never recovered. Of course, they have to contend in the market with the formidable rival carried on by Messrs Yearsley and Churchill, which is, as a work of reference, a much more useful companion to the library table.

An opportunity was last year afforded the Council of retracing their steps,—an offer having been laid before them by Mr Churchill, on terms which may be condensed as follows:—

The agreement to subsist for seven years. The Council to pay Mr Churchill £150 per annum; two shillings to be allowed the Council for every copy sold above 650, but the Council to pay nothing more should the sale fall below 650 copies. The price of the Register to be kept at four shillings as at present; but should it be agreed to raise the price, the Council to have a proportionate advantage.

On the whole, seeing that in the return to Parliament of the

receipts and expenditure of the Medical Council as at January 1861, the expense of printing the Register is set down at £594, 1s. 10d., and the proceeds of its sale at £166, 2s., showing a loss of £427, 19s. 10d., and in 1862 the cost figures at £386, 18s. 2d., and the proceeds at £93, 8s. 6d., involving a loss of £293, 8s. 6d., it may be doubtful how far it was wise in the Executive Committee, to whom the offer was referred by the Council, to reject a proposal which would certainly have secured a wider circulation for the Register, and would have fixed the annual loss at a sum much below what it has ever yet been. It appears that in the important town of Halifax, with a population of about 40,000, a medical man prosecuting for fees for professional attendance was non-suited because a copy of the Medical Register could not be obtained in the town. The evil is no doubt great; the officials attached to all Courts ought to have copies of this official book, and the Council requested the President to draw the attention of the Secretary of State to the subject; it was also agreed that the Executive Committee should prepare a list of persons, public offices and public institutions, to whom free copies should be sent. It was farther proposed to remit to the Executive Committee to take steps to secure that copies of the Register be placed for sale in the hands of the principal booksellers in all towns in the United Kingdom where county courts and assize courts are held. This motion was rejected,—at which we are not surprised; for, in the first place, the General Council could not compel booksellers to hold the work in stock; and, in the second place, the knowledge of the fact that copies were at hand and could be purchased at any time, would tend still farther to restrict the already very limited demand for the book.

But, after all, the Medical Act having secured to all registered practitioners equality of practice throughout Her Majesty's dominions, the great duty of the Medical Council was to devise and secure the adoption of measures calculated to enforce equality of education and equality of examination, and it is in this that the most signal failure has been displayed.

It is well known that of some bodies, whose courses of study may look very complete on paper, and whose examinations may seem to be a sufficient test of the knowledge of the candidate, the regulations are so carelessly enforced, and the examinations are conducted in so perfunctory a manner, that the *idle* student finds in them a convenient postern for entering a profession, the main doors of which would assuredly be shut against him. To put a stop to such a system, not only was power given to the Medical Council to regulate within certain limits the education of all bodies, but the Medical Act (sect. xviii.) provides, that "any member or members of the General Council, or any person or persons deputed for this purpose by such Council, or by any Branch Council, may attend and be present at any such examinations." This clause, though permissive in language, is evidently intended, according to

the usual reading of Acts of Parliament, to be enforced. Nor were the Council unmindful of their duty in this respect. In June 1860, the Education Committee appointed a sub-committee to consider the question of Visitation of Examination, and that sub-committee reported at the same meeting (see Minutes of Committee on Education for June 21, 1860). The Report, however, was not taken into consideration that session, but was discussed before the whole Council as a Committee of Education on the 1st July 1861. It was proposed, in this Report, to follow to some extent the Privy Council Scheme; to appoint an Inspector of Examinations; to allow him a salary and travelling expenses. The entire scheme was rejected, and up to this hour nothing has been proposed in its place; so that this important duty of the Council has been virtually abandoned.

And in regard to the regulation of the course of study, the Council, at their second meeting (August 3, 1859), appointed a Committee on Education, which gave in its first Report on the 11th of August 1859.

Whether the plan adopted by that Committee, of laying down a minimum course of education, was, on the whole, the wisest that could be suggested, may be doubted, but such a plan having been sanctioned, it remained for all the bodies having representatives at the Medical Council to yield it a prompt and ready obedience. At first it seemed as if this was to be done, and congratulations were heard on all sides of the improvement in education, already effected by the judicious "recommendations" of the Council.

The Education Committee, in their first Report, stated, and stated truly, that the preliminary general education for entrants into the medical profession was much more defective than the purely professional, and, accordingly, the chief efforts of the Council were directed to the improvement of that department; so that the minds of medical students being more sedulously cultivated before entering on their professional studies, might be the better prepared to receive and profit by the philosophical studies which a course of medical education implies. But the regulations of all the bodies were more or less tainted with those vicious considerations which regard medicine, or at least surgery, as a trade; and in some parts of the kingdom the vile system of apprenticeship, which dooms the victim to the employment of a shop and errand boy at a time of all others most important for acquiring general knowledge, was still flourishing. By this system, not only is the time of the student wasted, but he sees and prescribes for patients before he knows anything of disease, in many cases before he has even attended those instructions which inform him of the structure and functions of the human body; so that the very best means are taken to form a routine practitioner, following his profession empirically, the after-knowledge and after-science being seldom brought to bear on practice, rules for which he has picked up in the rough and ready

manner we have described. We do not mean to say there may not be bright examples of talent and philosophy trained under such a system,—undoubtedly there are, but they are the exceptions that prove the rule. We do not mean to say that too much may not be attempted now-a-days by lectures, and that the student may possibly be left too little to his own guidance in the acquisition of knowledge. This is a question apart; but two things we do assert, that the apprenticeship system occupies the student with mechanical drudgery at a time when suitable education should be developing his mental powers, and plunges him in the mysteries of practice without a clue to guide him through the intricate labyrinths where he is doomed to wander.

A decided blow, then, was given to this system by the second recommendation issued by the Council in 1861, which commences as follows:—

“That the time of commencing professional studies shall be understood to be the time of commencing studies at a medical school;” the General Council thus declining to recognise the time spent in apprenticeship as any part of the legitimate curriculum which every medical student would henceforth be required to pass through. This regulation was, of course, indirectly and unintentionally, a blow at those members of the College of Surgeons and Apothecaries’ Company who received large fees for taking and training apprentices, and its adoption was opposed by the representatives of these bodies. In fact, in the case of the Apothecaries’ Company, there was a legal difficulty in the way, as their lamented representative Mr Nussey explained when the matter was under discussion; but at a subsequent meeting, with that high-toned gentlemanly feeling for which he was conspicuous, he informed the Council that, rather than exhibit disloyalty, the Apothecaries’ Company would overcome that difficulty. The vote of Mr Nussey’s successor was painfully at variance with this.

It could scarcely be expected, however, that the authority of the Council would be openly defied; and yet in the regulations of the College, published in the *Lancet*, September 21, 1861, it is laid down by the College of Surgeons of England:—

“II. The following will be considered as the commencement of professional education:—1st, Attendance on the practice of an hospital, dispensary, or other public institution recognised by this College for that purpose; 2d, Instruction as the pupil of a member of one of the Royal Colleges of Surgeons in the United Kingdom, or of the Faculty of Physicians and Surgeons of Glasgow.”

A refusal to conform to the recommendations of the Council, so glaring and so defiant, perpetrated by the most powerful surgical body in the kingdom, could not, of course, be allowed to pass unnoticed. Accordingly, at the first meeting of the Scottish Branch Council held after the publication of the advertisement we have quoted, the subject was taken up, and the attention of the English

Branch Council was drawn to this glaring violation of the recommendations of the Council. The letter from the Registrar of the Scottish Branch Council was laid before the English Branch Council, and by that body referred to the General Council, on the 27th December 1861.

The subject came under the notice of the Council during its late session in three forms, and at three meetings.

First, by a motion, of which Mr Syme gave early notice, to the following effect:—

“That the regulations lately issued by the College of Surgeons of England for the qualification of candidates for their license are not in accordance with the recommendations of the Medical Council, and are not such as to secure the possession by persons obtaining such qualifications of the requisite knowledge and skill for the efficient practice of their profession.”

This motion was clear, precise, and definite, and was a logical deduction from the actual state of matters; for if the Council had laid down a *minimum* of education, it is evident that anything below that minimum ought to have been regarded by that body as insufficient. But the Council was obviously unwilling to deal harshly with the College of Surgeons, and hence an amendment, less rigidly definite in its terms, was moved by Dr Allen Thomson, and seconded by Dr Sharpey.—

“That the regulations lately issued by the College of Surgeons of England for the qualification of candidates for their license are not in accordance with the recommendations of the Medical Council, and that the College of Surgeons be requested to reconsider the grounds on which they have departed from the recommendations of the Council, and to state whether or not the regulations lately issued by the College, in reference to professional study, are intended to be merely of a temporary nature, or whether it is the intention of the college, at an early period, to bring their regulations into entire conformity with the standard recommended by the Council.”

It will be thought that, considering the position in which the Council was placed, one or other of these motions might have suited all parties. If the logical conclusion at which Mr Syme's motion arrived had an unavoidable appearance of harshness, the more timid spirits in the Council might have taken refuge under the amendment of Dr Thomson, which, while it vindicated the authority of the Council, adopted the tone of expostulation or entreaty, rather than of censure towards the erring body; but no, the “Previous Question”—virtually a decision that the matter was one in which the Council should not interfere—was carried by 13 to 8. The vote is entered on the minutes (May 17, page 4), and an analysis of the majority is curious. *First*, we have three Fellows of the College of Surgeons of England; *second*, every Irish member, with the exception of Dr Lect; *third*, the representatives of Oxford, Cambridge, and Durham Universities; *fourth*, the representative of the Glasgow Faculty; this last gentleman has the singular honour of being the only Scottish member who voted in the majority; it is difficult to discover the principle which guided him, for all the pro-

fessions and actings of the Glasgow Faculty should have placed him with the minority. Was the compliment of having the apprentices of members of the Faculty recognised as on a par with those of the Colleges of Surgeons, as is done in the obnoxious regulation, the sop that won over this Cerberus?

Second, But the question was not exhausted by the first day's discussion, for on the following day the reference on the subject from the Scottish Branch Council again opened it up. There was an earnest anxiety on the part of many members of the Council to save its consistency; and on this occasion Dr Thomson proposed his amendment as a substantive motion, and it was understood that the Fellows of the College of Surgeons of England who are members of the Council would not object to it. The Irish members, however, having, for some reason to themselves best known, assumed the right of patronizing the Royal College of Surgeons of England, again threw the ægis of their protection over it; and the following motion, proposed by Dr Corrigan, and seconded by Dr Stokes, was carried:—

"That it be an instruction to the Executive Committee to obtain returns of the regulations relative to Education and Examination from the several licensing bodies mentioned in Schedule A; to ascertain in what particulars the regulations of any of these bodies may differ from the recommendations of the General Medical Council; to request from those corporate bodies whose regulations so differ, such observations or explanations as they may deem fit to offer; and to submit the correspondence, with their report thereon, to the next meeting of the General Medical Council."

This motion was, however, carried only by the vote of the President.

Sir Charles Hastings and Dr Burrows, both of whom were absent from the vote of the previous day, added their names to the minority. The representative of the Glasgow Faculty seemed to have awakened from his dream, and supported the motion which, on the previous day, he opposed; as did also Mr Hargrave, the successor of poor Williams. *Eheu quantum mutatus ab illo!*

The conversion of Mr Hargrave must not only have been sudden, but very thorough; for on Tuesday, May 20th, we find him seconding a series of resolutions moved by Mr Syme, being the *third* way in which the Council were asked to consider the question.

The first of these reiterated the necessity for four years' professional study; the second excluded apprenticeship or pupilage as part of that study; the third pointed out the objectionable part of the regulations of the College of Surgeons of England; and the fourth was to the following effect:—

"That the Council having declined to notice this departure from their requirements, and having thus recognised an independent power in one of the licensing bodies, it is therefore unnecessary to take any farther steps for interpreting the educational clauses of the Medical Act."

These resolutions obtained no great support; probably from a hope,

even among the minorities in the two former divisions, that the Council might next year be induced to retrace its steps.

Having thus given a summary of the proceedings of the Council in this matter, we shall not conceal that in our opinion they have sealed at once the fate of the Council and of the Medical Act. In reviewing the proceedings of the Council in 1861, we stated that never was a body constituted with more of the semblance and less of the reality of power, and that all it had to rely on for securing the adoption of its recommendations was moral power. This one public emblem of authority has now been ruthlessly broken; henceforth every body is set free from allegiance to the Council, and allowed to do what seems right in its own eyes. Having refused to interfere in a case so well marked and decided, the Medical Council can, with no show of consistency, deal with another; the licensing boards will discover that such of them as loyally obey the behests of the Council are under-sold by others who disown its authority, and that the Council has neither the power nor the inclination to be a terror to evil-doers, nor a praise and protection to those who do well.

This session has also developed another inherent weakness in the constitution of the Council. It is obvious that there should be degrees in medicine according to the plain interpretation of the word. That is to say, that there should be higher and lower qualifications, with higher or lower education attached to each. Thus, a man who has obtained a university degree in medicine was naturally supposed, and ought to have had a more thorough academic education than he who practised on the license of a College of Surgeons or an Apothecaries' Company. This right rule, however, was not always observed; and it is notorious that some of the highest honours of medicine have been bestowed on qualifications lower than the minimum fixed by the Medical Council for the lowest.

In the very first report on education (11th August 1859) adopted by the Council, the following passage occurs:—

“The Council, looking at the importance and complicated nature of the question, have determined to postpone the consideration of the second and third heads (II. The purely Professional Education; III. The conditions on which the higher qualifications in Medicine and Surgery should be granted). They take this course, believing that it will tend to promote the reforms indicated by the provisions and the spirit of the Act of Parliament; for time will thereby be allowed for full consideration of such important points as the assimilation, as far as may be, of the purely medical educational systems, *and the providing that the higher degrees should be distinguished by corresponding academic rank, obtained by a full and as nearly as possible equivalent education.* The Council expect that by their next meeting they will be in a position to offer their views on those questions and on others of corresponding magnitude.”

The subject, thus early mooted, has never been lost sight of by the Council. In the next session (23d June 1860), the Council in Education Committee agreed to the following resolution by a majority:—

"They would record their opinion, that it is not desirable that any university of the United Kingdom should confer a degree in medicine, whether that of Bachelor or Doctor, upon candidates who have not graduated in arts, or passed all the examinations required for the Bachelorship in Arts, or the examinations equivalent to those required for a Degree in Arts."

Last session, Mr Syme, the representative of the University of Edinburgh, again brought the subject under discussion by moving:—

"That, while fully recognising the importance of a literary, philosophical, and scientific education as an introduction to the study of medicine, it is not expedient at present to restrict graduation in medicine to those possessed of a degree in arts, or who have passed an equivalent examination."

This was met by Mr Teale moving that the Council reaffirm their opinion of the former year, and now extend this expression of it to the degree in surgery.

On a division, there voted for Mr Syme's motion, 1; for Mr Teale's amendment, 20.

The following month (1st August 1861), the *Senatus Academicus* of the University of Edinburgh having met, agreed, *inter alia*, to the following resolution:—

"The *Senatus* regrets that it cannot concur with the Medical Council in one of their resolutions which declares,"—and then follows the resolution as already quoted. The remainder of these resolutions go to show that the recommendations of the Medical Council are at variance with the Ordinances of the Scottish University Commissioners as confirmed by the Privy Council, and that the University prefer yielding obedience to the latter.

The resolutions, of which the one quoted above is the second, conclude as follows:—

VIII. That, in conclusion, while thus noticing, in courtesy to the Medical Council, their recommendation as to the education of medical graduates, the Senate must, with great respect, take the liberty of stating that the Council seem to have gone beyond their jurisdiction in recommending to the Scottish Universities a different plan of education and examination from that which the University Commissioners have enjoined in their Ordinances. That the Medical Council are empowered by the Medical Act to take the necessary steps, according to a certain form of procedure, to secure, on the part of all persons presenting their qualification for medical practice to the Registrar for admission in the register of legally qualified practitioners, "the possession of the requisite knowledge and skill for the efficient practice of their profession:"—[*Clause xx.*] That the Council have the right to demand this much of all graduates and licentiates of Universities and Medical Corporations alike, and no more: But that they are not empowered to demand or recommend that, while the licentiates of corporations shall be qualified to that extent, graduates of Universities shall be qualified in a higher degree; and that the duty of fixing what that superiority should be belongs to the authorities of the Universities.

The doctrine thus enunciated was to a certain extent new. In

1859, it is plain by the unanimous adoption by the Council of the clause in the Education Report which has been quoted, that no such opinion was entertained by any of the members. In 1860, indeed, when the resolution also quoted was adopted, Dr Storrar intimated this view, and pledged himself to obtain an opinion of counsel on the subject. In 1861, it was understood such an opinion had been obtained for the University of London, the body which Dr Storrar represents in the Council, and that it awarded to the Council the power of regulating the higher as well as the lower degrees in medicine.

At a meeting of the English Branch Council, held 27th December 1861, Dr Storrar carried a motion instructing the solicitors of the Council to prepare a case, under revision of a committee, to determine how far the Council have power to lay down varied schemes of education corresponding to varied degrees in medicine. This was manifestly an irregular proceeding; such an opinion was not wanted for the guidance of the Branch Council seeking it; the case, moreover, was a peculiarly Scottish one, for in all other divisions of the kingdom the education of university graduates was sufficiently high, and in Scotland alone did the universities seek to come into competition with the colleges. Accordingly, on the 11th Jan. 1862, the Scottish Branch Council adopted the following resolution:—

“That in the opinion of the Scottish Branch Council, while it is quite regular for any Branch Council to take a legal opinion on any point required for its own guidance, in regard to matters coming properly within its jurisdiction, it is altogether *ultra vires*, and an invasion of the rights of the General Council to take one on a matter which concerns the actings of the General Council.”

The case, prepared under the direction of the English Branch Council, was submitted to the General Council; and the thorough and complete alteration of it in every part was the best lesson that could be given of the impropriety of the whole proceeding, while the refusal by the Council to entertain the kindly and well-meant *ex post facto* sanctioning legislation of Dr Acland was very significant.

This, however, by the way.

The opinion has also now been obtained from Sir Roundell Palmer and Mr Selwyn, and is decidedly unfavourable to the General Council having the power to lay down one style of education for the lower, and another for the higher degrees of medicine. The effect of this is obvious. Should there be universities who look more to the number than to the character of their graduates, and who may be willing or anxious to enter into a competition with the colleges, it will be easy for them, by their representatives in the Council, to assist in raising the minimum standard, below which no loyal body can fall. Limiting, then, their own requirements to this minimum standard, they may offer the high-sounding distinction of an academic degree on terms not one

whit higher than those on which qualifications usually reckoned as the lower can be obtained; and this evil the Medical Council is powerless to remedy.

On the whole, looking at how little that body has power to do, and how much less it seems inclined to do, and having regard to the whole state of the profession, we think that the sooner it is abolished the better.

We see a new Medical Reform Bill is to be prepared under the auspices of the Council. Will it go to the root of the matter? Will it sweep away the General Council, with its cumbrous and expensive machinery? Will it make provision for securing the *bona fide* attendance of students at their classes? Will it really regulate and supervise the examinations? Will it, in short, be aught else than a mockery, a delusion, and a snare?

Let the profession rouse itself, and insist on real reform. Let registration be carried on under government authority. Let government see to the efficient inspection of our schools and examinations. Let pretenders to medical titles be punished.

This is all in medical reform which the profession and the public require, and nothing short of this should they demand.

The Diseases of the Prostate: their Pathology and Treatment. By HENRY THOMPSON, F.R.C.S., Assistant-Surgeon to University College Hospital, etc. etc. Second Edition. London: Churchill: 1861. Pp. 364.

MR THOMPSON is well known as an able and trustworthy writer on the diseases of the urinary organs. In particular, he has devoted much attention to the investigation of the healthy anatomy and the morbid conditions of the prostate gland. The work, the title of the second edition of which forms the heading of this notice, was originally much more limited in its scope, and was designated "The Enlarged Prostate." But the Council of the Royal College of Surgeons of England having announced, in 1859, as the subject for the Jacksonian prize, "The Healthy and Morbid Anatomy of the Prostate Gland," Mr Thompson entered upon a fresh series of investigations, the results of which were embodied in an essay which gained the prize. The greater part of that essay is incorporated in the present volume, which consequently differs widely from its predecessor, as it embraces a much more extensive field of inquiry. The work is divided into two parts, the first comprising an anatomical introduction, which occupies fifty pages; while the second constitutes a complete treatise on the pathology, symptomatology, and treatment of the morbid conditions of the organ in question. We can cordially recommend this work to our readers as containing the fullest and most accurate account of the diseases of the prostate with which we are acquainted.

Part Third.

PERISCOPE.

SURGERY.

I. CASE OF ILIAC ANEURISM REMEDIED BY OPENING THE SAC, AND TYING THE COMMON ILIAC, THE EXTERNAL ILIAC, AND THE INTERNAL ILIAC ARTERIES.

BY PROFESSOR SYME.

A PAPER containing an account of the above case, was read by Professor Syme before the Royal Medical and Chirurgical Society on the 27th of May. The author reminded the Society that two years ago he had endeavoured to show reason for regarding the preference which had been given to the Hunterian operation for aneurism as too exclusive, since the circumstances which rendered it advantageous in cases where the popliteal artery was affected might be so different in other situations as to reverse the grounds of choice, as in axillary aneurism, where the vessel is easily reached at the seat of rupture, and with great difficulty, as well as danger, tied above the clavicle. In reply to the doctrine usually taught, that the artery is not in a condition suitable for the ligature, so far as the aneurismal sac extends, it was remarked that the size of the tumour does not depend upon the state of the vessel, and therefore cannot be taken as any measure of the extent to which its coats are impaired; while the formation of a sac, so far from proving injurious to the artery, must rather tend to strengthen and support it by consolidating the textures in its neighbourhood. Trusting to this view of the matter, the author had operated with success in various cases, and now desired to relate one of recent occurrence, which seemed strongly corroborative of the opinion he had expressed.

R. L., a seaman, thirty-one years of age, towards the end of November last received a blow on his left groin, which caused a painful swelling that was treated as glandular; and about a month afterwards strained himself on the same side in leaping from a ship that was about to sink, with the effect of causing the formation of another tumour some inches higher up than the former one. On this account he repaired to the Cumberland Infirmary, at Carlisle, and was then found to suffer from an iliac aneurism. After remaining a week in the hospital, he went home until the end of February, when he was admitted into the hospital of Dumfries. Operative interference having been there declined, the patient again went home, and betook himself to intemperate habits, with the effect of injuring his health and greatly increasing the tumour.

On the 18th of April he was admitted into the Royal Infirmary of Edinburgh, when the aneurism was found to extend from below Poupart's ligament considerably higher up than the umbilicus, and from two inches beyond the middle line of the abdomen towards the right side, completely across the left iliac region, so as to overlap the crest of the ileum. There was a strong pulsation throughout the whole extent of the tumour, great pain in the course of the crural nerve, and considerable cedema of the thigh.

On the 20th, chloroform having been administered, the cavity was examined by introducing first one finger, then another, and finally the whole hand, without any trace of the artery being detected, whence it was concluded to be out of its usual situation. A screw clamp provided by Professor Lister, of Glasgow, was then employed to effect compression of the aorta; and this having been ascertained to be complete, a free incision was made through all the textures concerned, so as to lay the sac fully open, and allow six pounds of blood and clots to be scooped out. It then appeared that the arterial orifice was in the roof of the aneurism, from the vessel having been raised in this

direction by the blood effused under it; and this orifice being brought distinctly into view by dissection of the sac, was tied on both sides of the vessel. But as blood still issued, though not with the same force as before the ligatures were applied, it was concluded that the internal iliac originated from the portion of artery comprehended between them; and this vessel also having been exposed, was tied by a thread passed round it. The wound was then dressed superficially, and everything went on favourably. On the nineteenth day the ligatures separated, and the cavity gradually contracted.

Some observations were then made,—1. On the importance of ascertaining that the aorta could be effectually compressed so as to prevent hæmorrhage from its primary branches. 2. On the sac not maintaining a profuse and protracted suppuration like the investment of a chronic abscess, but readily contracting so soon as the distending force ceased to act. 3. On the impossibility of affording relief in the case related by any other means than the one employed, and the danger which would have attended ligature of the common iliac at an earlier period from the aperture being so near the bifurcation.

In conclusion, the author expressed his hope that the cases of carotid, axillary, gluteal, and iliac aneurisms which had come under his observation, would induce teachers of surgery to reconsider the propriety of representing the Hunterian operation as so exclusively the rule of practice as it had hitherto been regarded.

Mr Partridge asked if, when the orifice of the artery was exposed, *Mr Syme* tied the vessel from within the sac or exterior to it.

Mr Adams had also some doubt as to the precise method of applying the ligature.

Mr Syme then further explained.

Mr Adams considered that this method of treating aneurism was very bold and decisive, and justified by the successful result of the case mentioned. Again, it could be performed in cases in which any other operative interference would be impossible, and there was less risk of secondary hæmorrhage, and, as all the clots were removed, of suppuration of the sac of the aneurism. The compression of the aorta was not new. *Baudelocque* had tried this method in uterine hæmorrhage, and he (*Mr Adams*) could easily conceive that it might be very useful in such operations as amputation at the hip-joint.

Mr Syme said that he should be happy to reply to any statement at variance with the opinions he had expressed in the paper; but as nothing had been brought forward against it, he was at a loss to make a reply. There were, he said, three points to which he wished especially to direct attention:—First, That there was no reason to conclude that the artery in the sac of an aneurism was unsound beyond the point of rupture; and, if sound, it was better to tie near that point. Secondly, That the artery, if unsound at the seat of the aneurism, is just as likely to be unsound at parts at a distance, where, according to the Hunterian method, it is usual to tie it. In the case of axillary aneurism which he had previously brought before the Society, the patient got quite well and returned to his work, but afterwards died of aneurism of the aorta. In this case the whole arterial system was diseased. Thirdly, If the arteries are unsound, it is better to tie near the ruptured part. In ligaturing arteries in stumps after amputation, he had found the arteries so diseased that they grated under the ligature, and yet the case did well. In some cases, as in popliteal aneurism, it was impossible to tie the artery at the ruptured part. He felt confident that these principles were correct; but one case, under *Sir Astley Cooper's* care, of ligature of the abdominal aorta, made him feel anxious. The patient was a man aged thirty-eight. The aneurism followed a blow. It gradually increased in size, and pressure applied to it caused sloughing, followed by hæmorrhage. *Sir Astley Cooper* endeavoured, by making an opening, to compress the artery, but, on introducing his hand, felt nothing but a confused mass of clots. He, therefore, enlarged the wound, and ligatured the aorta above the bifurcation. In the dissection of this case, it was stated that the track of the artery was not in the aneurism. He (*Mr Syme*), with the greatest

respect for the opinion of Sir Astley Cooper, felt inclined to believe that he had been mistaken, rather than that there was an exception to the universal rule.—*The Lancet*, 7th June.

II. ON DECEPTIVE FLUCTUATION. BY PROFESSOR NÉLATON.

M. NÉLATON took the opportunity afforded by the admission of a man who had received a severe injury of the forearm, to point out to his class an error which is frequently fallen into, and against which it is well to be prepared. The injury in question had been produced by a circular saw, revolving three or four hundred times in a minute; the skin, the superficial muscles, and the tendons had been divided, but neither the vessels nor the nerves had been seriously compromised. The wound had been brought together by points of metallic suture, but, as usually happens in such cases, union had not taken place. In fact when the muscles, the tendons, and the sheaths are divided, we should not attempt to bring about union by the first intention, as we shall fail in our endeavour and may expose the patient to serious accidents. In the patient in question, the dorsal surface of the hand was considerably swollen, and fluctuation seemed so distinct, that many persons would have supposed the swelling to be occasioned by a collection of purulent fluid. This was not the case, and M. Nélaton pointed out that there are various parts of the body where the tissues impart a deceptive sensation of fluctuation. In the upper extremity, these parts are the dorsal surface of the hand, and the upper and external part of the forearm on a level with the head of the radius. Without a knowledge of this fact, we might be very apt, on the occurrence of a swelling in either of these regions, to introduce an instrument which would give issue to no fluid but blood. The same error has been committed a hundred times in the case of imaginary collections of pus in the substance of the calf of the leg, as well as in the upper and outer part of the thigh, in the situation corresponding to the tensor vaginae femoris. Another locality where this deceptive fluctuation occurs, is the inner and upper part of the thigh, on a level with the iliacus and psoas muscles.—*Journal de Médecine et de Chirurgie pratiques*, May 1862.

III. ANEURISM OF THE PALMAR ARCH TREATED BY CHLORIDE OF ZINC. BY PROFESSOR NÉLATON.

A LABOURER, forty-eight years of age, was admitted under the care of M. Nélaton, on the 20th of January, on account of an abscess of the hand. The abscess was opened, and pus escaped. Arterial hæmorrhages supervened at various intervals until they amounted in number to eight or ten. At last the bleeding ceased to recur, and a small aneurism appeared in the situation of the palmar arch. It resembled a granulation, was of the size of a pea, of a violet colour, and its pulsations were isochronous with those of the palmar arch. On the 1st of February, a final hæmorrhage having taken place on the occasion of the rupture of this little pouch, M. Nélaton determined to attack the aneurism with a powerful caustic. Accordingly, on the 3d of February, a portion of paste of chloride of zinc a little larger than the tumour was applied to it, and was surrounded with wadding, in order that the action of the caustic might be limited to the sac. The day passed without any particular pain being experienced, and no change was made in the application. On the following day, there was seen in the place of the paste a hard black mass; this was an eschar which separated three days afterwards. On the next day (the 8th) no pulsation was perceptible; a coagulum had formed in the aneurismal sac after the destruction of the latter, and this clot, extending into the artery, had obstructed its calibre in a sufficient extent to present an obstacle to the occurrence of hæmorrhages.—*Journal de Médecine et de Chirurgie pratiques*, May 1862.

IV. ON THE OBLITERATION OF VARICOSE VEINS.

M. BLOT communicated to the Society of Surgery, two cases of spontaneous cure of varices in pregnant women by a rare mechanism, namely, by adhesive phlebitis. This communication gave rise to a discussion which appears calcu-

lated to dispel the delusive hopes which have been entertained regarding the radical cure of varicose veins by various coagulating methods. For M. Chassaignac and then M. Velpeau, expressed the opinion that the cure in such cases is only temporary. The obliteration of veins by clots, said M. Chassaignac, is far from being permanent. Every day we may see patients affected with varices be the subjects of obliterating inflammation, and, nevertheless, if they be examined some time afterwards, it will be found that the blood has resumed its course through the veins temporarily closed. M. Chassaignac thinks that coagulating substances injected into varicose veins, act in this way; they give rise to an inflammation, clots are formed, the clots are gradually absorbed, and the circulation is re-established in the veins. In support of the same opinion, M. Velpeau related an observation, which shows how difficult it is to obtain a permanent closure of varicose veins by means of adhesive inflammation.

Some years ago, a patient affected with varicose veins was admitted into La Charité. M. Follin, who was at that time acting for M. Velpeau, being anxious to cure the man, injected perchloride of iron into the vessels. A violent inflammation supervened, followed by the formation of abscesses, and the life of the patient was seriously endangered. The patient, however, recovered; and in order to have the opportunity of following the progress of the case, M. Velpeau kept him for a considerable time in the hospital, and at the end of it he was discharged with the varicose veins to all appearance cured. Six months afterwards the same man presented himself, and already new veins could be traced below the skin. Within a short time these veins were varicose. M. Velpeau had observed numerous similar cases. He also added: dissect one of the veins at the bend of the arm in persons who have been often bled, and you will find in a very limited space numerous marks of punctures, without there being any adhesion between the walls of the vessel. Amussat noticed the same negative fact in animals. On the other hand, when surgeons attempted to produce obliteration of varicose veins by the application of caustics, they were continually unsuccessful, the desired result appeared to have been attained, but in a short time the varices were reproduced.

M. Broca believed that veins might be obliterated by an adhesive inflammation; he was even of opinion that the adhesion of their walls might be as solid as is observed in the case of the pleura; but, like MM. Velpeau and Chassaignac, he had observed that there are varices which for the time are obliterated by a clot, that then the clot disappears and the vessels regain their permeability. M. Broca had studied with particular care the clot produced in a varix by the injection of perchloride of iron; it was at first very solid, then gradually diminished in consistence, until it was completely dissolved.

In replying to the objections of MM. Velpeau and Chassaignac, M. Blot pointed out that the obliteration which he referred to, and of which his two patients presented examples, was an obliteration by direct adhesion of the venous walls without the medium of a clot, an adhesion the possibility of which M. Velpeau had not denied, although no doubt its occurrence was rare, and could only be established by very careful examinations.—*Journal de Médecine et de Chirurgie pratiques*, April 1862.

V. PSOAS ABSCESS OPENED SPONTANEOUSLY INTO THE INTESTINE. BY M. COLIN.

FRANÇOIS I—, a corporal in the 33d Regiment of the line, of a moderately robust constitution, and whose health had always been good, experienced, on the 10th of January last, while engaged in gymnastic exertions, a sharp pain in the lumbar region, but was able, in spite of it, to return on foot to his barrack. Next day and the following days he was on duty, feeling nothing in the affected part but a vague sensation of uneasiness, accompanied occasionally with darting pains, when, on the 19th of the same month, having just returned from a parade, he was suddenly seized with such severe pain that his comrades were obliged to undress him and put him to bed: the pain at this time was so much aggravated by the slightest movement of the right lower limb, that the patient was obliged to remain in a state of almost absolute immobility. At the same

time some signs of gastric derangement manifested themselves; there was headache, loss of appetite, and constipation. The patient was in this condition when admitted, on the 5th February, into the Val-de-Grâce, under the care of M. Colin. The following was the condition of the patient at visit next morning:—Constant severe pain seated in the lumbar region, radiating spontaneously on the slightest movement towards the inner part of the right thigh, which is semiflexed upon the pelvis; volume of abdomen and condition on percussion, natural; pressure upon any part of the belly causes pain in the right flank; the suffering is intolerable if an attempt is made to compress the latter locality, by placing one hand over the lower part of the spine and the sacrum, and the other on the anterior wall of the abdomen; palpation performed in this way does not detect any tumefaction or doughiness. In addition, there is complete absence of fever, the complexion is bilious, the tongue whitish. He was ordered fifteen leeches and a hip-bath.

Next day the application of the leeches was repeated, and the baths were ordered to be continued daily. The pain yielded slightly, but a gradual approximation was noticed between the crest of the ileum and the right hypochondrium, so that the trunk was bent laterally; and this new attitude, joined to the position of the thigh, impress upon all the movements of locomotion of the patient a peculiar character, such as is habitually observed in cases of abscess in the lumbar region. The diminution in the pain permitted a doughy sensation to be recognised behind the intestine in the right flank. Sixteen days later, on the 22d of February, without appreciable cause, nausea and distension of the stomach manifested themselves, but disappeared during the night, after numerous eructations. The same symptoms recurred on the 24th, but continued during the night; and at the visit next day there was considerable tympanitis of the abdomen, with dyspnoea, a faintly jaundiced tinge, and increased sensibility of the abdomen. From this time the constipation was more obstinate; the patient had frequent mucous regurgitations, and occasional slight shiverings. From the 24th of February to the 15th of March the patient remained in much the same state; but his strength gradually diminished, and, as much from weakness as on account of the lumbar pain, he did not leave his bed. During the whole of this time a daily and very careful examination did not detect the presence of any tumour either above the crest of the ileum or below the crural arch; methodical and cautious palpation merely recognised the persistence of a doughy sensation deep in the iliac fossa.

On the 15th of March, after the administration of a purgative enema, and pretty severe colicky pains in the abdomen, there were several copious light-coloured stools, the last of which were almost exclusively composed of pus; the evacuations retained their characters for several days, the appetite and sleep gradually returned, and at the same time the lumbar pain diminished. From the 20th the patient walked more easily than he had been able to do since the beginning of his illness. On the 25th the pain had abated so much that it could scarcely be recalled by pressing from behind forwards the flank between the two hands,—a mode of examination which established the absence of all doughy feeling, and of all abnormal resistance. The gastric symptoms and the constipation had entirely subsided; and the patient was discharged on the 29th, walking erect and easily, although there was still a considerable approximation between the right iliac crest and the false ribs.

The sub-aponeurotic seat of the abscess was well indicated in this case by the following circumstances:—1st, The commencement of the complaint in a sudden and violent movement; 2d, the absence of projection or of dulness on percussion in the anterior part of the abdomen; 3d, the flattened form and deep seat of the doughiness; 4th, the position and pain of the thigh; 5th, the absence during two months of every sign of affection of the intestine or the peritoneum, which react so rapidly in the case of abscesses within or below the peritoneum. As in other similar cases, the commencement was insidious, the progress of the case slow. The purulent collection discharged itself by the intestines,—a mode of termination generally favourable in the case of iliac abscesses, but,

from anatomical reasons, of unfrequent occurrence in the sub-aponeurotic variety. The distension of the abdomen, the constipation, the jaundice, and the nausea indicated the extension of the abscess towards the intestine; and perhaps to the purgative injection, followed by the discharge of pus, should be attributed the honour of the success. Without doubt, the intestinal perforation, contrary to what usually happens, was sufficiently large and direct in this case, as was indicated by the rapidity and persistence of the cure. The free and abundant discharge of the pus is of such importance, that if any external swelling had been seen, even at the time when evacuation by the intestine took place, there would have been no doubt as to the propriety of making another opening with the bistoury. The unfortunate result of a case lately published makes it important to insist upon this precept.—*Gazette des Hôpitaux*, 7th June 1862.

VI. TREATMENT OF BURNS CAUSED BY PHOSPHORUS.

BURNS produced by this substance, which is so largely employed in the present day, are rendered still more severe by the circumstance that during the combustion of the phosphorus, phosphoric acid is formed, which acts as a caustic and irritates the wound. The *Revue populaire des Sciences* refers to a mode of treatment which has been successfully employed in the chemical laboratory at Stuttgart, and which deserves to be generally known. The injured part is in the first place to be carefully washed with cold water containing a small quantity of a salt of soda, of wood-ashes, or even of ammonia; after this a weak solution of chloride of lime is to be employed as a dressing.

VII. ANALYSIS OF TWO HUNDRED AND THIRTY CASES OF LITHOTOMY.

BY THOS. BRYANT, F.R.C.S.

MR BRYANT laid a communication before the Royal Medical and Chirurgical Society, based on an analysis of cases collected from the records of Guy's Hospital of the last twenty-five years, his own notes supplying every example during the last eight. A table illustrating the principal points was brought before the Society.

Frequency of the Operation of Lithotomy at the Different Periods of Life.—From his own cases, Mr Bryant showed that nearly one-third of the whole number of cases tabulated occurred in children under five years of age, and about one-fourth between five and ten years of age; more than half, or 56 per cent., of all the cases having taken place in children during the first ten years of life. This tendency in childhood to calculous disorders certainly was not a disease of debility, but appeared to belong to a condition of body which is not far from sound health; it being an unquestionable fact that the healthiest looking and apparently best-nourished children admitted into a London hospital were those suffering from stone.

In every succeeding Five or Ten Years Period passed after Ten Years of age, the Presence of a Stone became more rare.—Between the ages of ten and fifteen, it appeared to be half as frequent as it was in the preceding quinquennial period; and this number may be again halved between the ages of fifteen and thirty. In middle adult life, lithotomy is an operation of some rarity, lithotrity being then more applicable; but in old age, lithotomy appears to be rather more frequent.

Mortality of the Operation.—In quoting the results of the analysis of his own table, the author compared them with those given in the *Medical Times and Gazette* on 8th January 1859, which was stated to include the general experience of the London hospitals for three years and a half. With five exceptions the whole of his own cases had been operated upon by the lateral method.

Mortality of the Operation at Different Periods of Life.—During the first ten years of life it was the most successful,—1 case only in every 21½ being fatal. In the journal above mentioned the average of this period was 1 in every 13.6.

Analyzing the cases under ten years of age, it was shown that at the age of two years, 6 cases were recorded, 1 of which died; but the cause of death was evidently acute bronchitis, and, therefore, unconnected with the operation. At

the ages of three and four, 44 cases were tabulated, with not one fatal example. Between five and ten, 79 cases were recorded, 5 of which died, or about 1 in every 16. In 2 of these 5 cases, hæmorrhage was the assigned cause; but in both there had been distinct evidence of the presence of the calculus for at least two years, or for nearly half the patients' lives. In 2 cases, aged nine and ten, symptoms had existed from birth; and in both a subsequent examination revealed old and extensive renal disease. From this it appeared, that in children under ten years of age, the dangers of the operation were very slight, particularly if the symptoms of stone had not been of long standing; for if the symptoms have not existed for a lengthened period, there is good reason to believe that the kidneys are sound, and if so, the risks of the operation are a mere nothing. If, however, on the other hand, there have been evidence of the presence of calculous disease for some years, or for a large portion of the child's life, renal disease may assuredly be suspected, and the danger to life by an operation will consequently be much magnified, the dangers of lithotomy being exactly in proportion to the extent of the renal affection, and this being fairly measured by the duration of the symptoms.

Passing on to the next decennial period, including those operated upon between the ages of ten and twenty, 49 cases were tabulated, 5 of which proved fatal; but on these being again divided, it was shown that between the ages of ten and fifteen,—that is, before the period at which the genital organs have become developed,—the mortality was much less, 2 cases only dying out of 31; whereas between the ages of fifteen and twenty, when the genital organs had become parts of importance, the mortality was twice as great, 3 cases proving fatal out of 18,—the risks of the operation being just three times as great. The cause of death in these cases was also shown to have been renal disease.

In young adult life—that is, up to the age of forty—1 patient in every 6½ was shown to have died; but beyond forty years of age the mortality had increased to 57 per cent., more than one-half sinking after the operation.

In looking for the causes of death in the 19 cases which proved fatal in patients above forty years of age, a striking fact became manifest. In 10 a post-mortem examination was subsequently made, and in all extensive renal disease was readily detected. In all there had been evidence of a calculus being present for many years.

The author dwelt for some time upon the fact that the cause of death in the majority of the cases was renal disease, and showed that, if this complication was a fatal one after most operations, it was palpably of greater importance to the one which he was then considering. In the preceding part of his paper he had shown how fatal the complication had been at different periods of life, and he thought that it might be safely asserted that from the earliest to the latest period of life the risks of lithotomy are exactly commensurate with the extent of disease in the renal organ. Thus, in young life, when this is by no means of common occurrence, a good result as a rule takes place; but at a later period, when its presence is more frequent, a bad result has too commonly to be recorded.

The fact that peritonitis and pelvic cellulitis were present in a large proportion of the cases examined did not appear to be an argument against the view that disease of the kidney was the chief cause of death, for the author asserted that physicians and surgeons were all well aware of the intimate connexion which existed between renal disease and inflammation of the serous membranes. In medical practice it was well known that this form of inflammation was the immediate cause of death in most examples of Bright's disease. And regarding the question from a surgical point of view, it was clearly open to a doubt whether so many patients would sink with peritonitis and pelvic cellulitis after lithotomy—whether young or old—if they had not been rendered prone to such inflammations by the presence of a renal affection.

As a practical conclusion, the author was led to assert that—

The dangers of lithotomy as an operation, independently of accidents, were not great; and that a fatal result from such alone rarely took place.

Where death followed, renal disease was the cause in almost all cases; and this renal affection appeared to follow almost necessarily upon the long existence of the calculus.

The duration of the symptoms was the best and surest guide to the diagnosis of the complication; and in proportion to the period of their existence were the renal affection and its extent to be suspected, and as a result was the danger of the operation to be dreaded.

The necessity of the early detection of a calculus became, then, an important point, and its early removal imperative.

The author then compared the number of stone-cases admitted into the metropolitan hospitals with those that were operated upon forty years ago, and showed that the number of cases in the present day had not diminished; consequently, that the fear was groundless which originated the idea that, from the freedom with which stone-cases were operated upon in the provinces, the metropolitan institutions would be deprived of their practice.—*British Medical Journal*, May 17, 1862.

VIII. PORTIONS OF THE PROSTATE REMOVED IN LITHOTOMY.

At the meeting of the Pathological Society of London, held on the 7th May, Mr Henry Thompson exhibited, for Mr Cadge of Norwich, several portions of the prostate which had been removed in lithotomy. The patient was a gentleman, aged 62, who had for some time been the subject of urinary symptoms, together with hæmorrhoids, a large stone having been detected in the bladder. The ordinary lateral operation was performed. Two calculi of nearly the same size, and weighing together nearly four ounces, were removed. With each calculus a prostatic outgrowth of considerable size came away. The patient recovered well. Mr Cadge adverted to the occasional occurrence of the extraction of portions of the prostate in lithotomy operations. It had occurred, he said, several times in his own practice, and in none had any ill consequences followed. Sometimes the portion of prostate came away between the handles of the forceps in front of the hinge; at others between the blades just in front of the calculus.

A letter from Dr Keith of Aberdeen was read, in which that experienced lithotomist stated that the accident under consideration had occurred in his practice about twelve times. He agreed with Mr Cadge in thinking that it was not attended by any special risk to the patient.—*Medical Times and Gazette*, May 31, 1862.

Part Fourth.

MEDICAL NEWS.

GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

Minutes of Meeting, Wednesday, May 14, 1862.

ROYAL COLLEGE OF PHYSICIANS, LONDON.

Mr GREEN, *President*, took the Chair at two P.M. *Present*,—Dr Burrows, Mr Arnott, Mr Cooper, Dr Acland, Dr Bond, Dr Embleton, Dr Storrar, Dr Alex. Wood, Dr Andrew Wood, Mr Watt, Mr Syme, Dr Thomson, Dr A. Smith, Mr Hargrave, Dr Leet, Dr Apjohn, Dr Corrigan, Sir Charles Hastings, Dr Sharpey, Mr Lawrence, Mr Teale, Dr Christison, Dr Stokes,—Dr Francis Hawkins, *Registrar*.

The minutes of the last meeting were read and confirmed.

Read the following official notice:—

"Apothecaries' Hall, London, E.C., April 19, 1862.

"SIR,—I am directed by the Master, Wardens, and Society of Apothecaries of the City of London, to acquaint you, for the information of the General Council of Medical Education and Registration of the United Kingdom, that the Society have chosen George Cooper, Esq., of Brentford, as a member of the General Council, in the room of the late John Nussey, Esq., resigned.—I have the honour to be, Sir, your most obedient servant,

"ROBERT B. UPTON, *Clerk to the Society.*

"Dr Hawkins, Registrar of the General Council of Medical Education and Registration."

Mr Cooper was then introduced to the Council by Mr Lawrence.

Read the following Report from the Pharmacopœia Committee:—

REPORT OF THE PHARMACOPŒIA COMMITTEE OF THE GENERAL MEDICAL COUNCIL.

"The Pharmacopœia Committee, appointed by the General Medical Council, beg to report to the Council that the manuscript of the "British Pharmacopœia" is now completed, and most of it ready for press. Until lately the Committee confidently expected to have on this occasion laid a copy of the whole Pharmacopœia in proof on the Council table. But difficulties of a legal nature, from which the Council alone can relieve them, arose about two months ago, and have prevented them in the meantime from continuing their labours.

"The Pharmacopœia Committee was appointed by the Council, in the first session of the Council, towards the end of November 1858. In conformity with the plan for their proceedings, approved by the Council, they associated with themselves members from the three Colleges of Physicians and the Pharmaceutical Society of Great Britain. Sub-committees having been then established at each of the three capitals, they commenced their duties in February 1859.

"It was, in the first instance, resolved that the Pharmacopœia should consist of two parts and an appendix,—the First Part to consist of the *Materia Medica* List; the Second Part, of the Preparations and Compounds; and the appendix, of such articles as are not themselves used in medical practice, but which are employed for the chemical processes and tests of the Pharmacopœia.

"I. The *Materia Medica* List contains every substance, whether obtainable in ordinary trade, or prepared by chemical processes in the Second Part, which the Committee have found, on careful inquiry, to be so far approved in practice as to be entitled to a place in a national Pharmacopœia. Not a few remedies contained in the Pharmacopœias of the three Colleges of Physicians have consequently been removed, and many new ones have been adopted. Under each article of the *Materia Medica* List, the Committee have given—1. A Latin pharmaceutical name, by which it will be prescribed, an English synonyme for use in describing the processes in Part Second, and its chemical symbol, if it be a substance of definite constitution. 2. Its definition, together with its botanical reference—if it be a plant, or obtained from a plant—and also a reference to a correct figure of the plant; and in all cases, when possible, a statement of the quarter whence the article is derived. 3. The characters by which it may be distinguished from all other articles in the establishment of the druggist. 4. The tests by which it may be known to be free of known impurities or adulterations. 5. The official preparations of which it is an active ingredient.

"II. The Second Part, or the Preparations and Compounds, comprises processes for all forms for the administration of medicines, for the extempore prescriptions of practitioners, or for obtaining articles in the *Materia Medica* List by chemical operations.

"The Committee took into consideration the question, whether the transference of the manufacture of many chemicals from the hands of the druggist into those of the manufacturing chemist, might not render it practicable to withdraw a great part of the chemical processes from the Pharmacopœia. But on mature examination, it was resolved that they should be retained.

"The Appendix needs no explanation.

"The Pharmacopœia, thus organized, contains 322 articles of the *Materia Medica* List, 380 processes, Galenical and chemical, and 49 substances belonging to the Appendix.

"In order to settle what articles and processes should be introduced, as well as various other general or preliminary matters, it was soon found necessary to hold a conference of Sub-committees, consisting of three delegates from each.

"The conference met in London in May 1859, and having settled—as far as could be done at the outset—the articles and processes to be admitted, they divided each part into three equal portions, and assigned the charge of one portion of each part to the three Sub-committees.

"The portions undertaken by each Sub-committee, as they were brought to maturity, were submitted to both the other Sub-committees, and after this revision were corrected, where necessary, by that which originally undertook them.

"It was found indispensable, however, to hold another conference of Sub-committees last year, in order to adjust many points which could not be settled by correspondence.

"This meeting was held in Edinburgh in September last. One important result of the conference on that occasion was, that the whole chemical tests in the *Materia Medica* List, and the chemical processes in the Second Part, were sub-committed to two of the members, who twice met in Dublin in October and December last, to make the necessary experimental investigations.

"The meetings of all kinds which have thus been held for the business of the Pharmacopœia, have been the following:—The London Sub-committee has met 149 times; that of Edinburgh, 105 times; that of Dublin, 131 times. The meetings of the two conferences were 10 in number, and the Chemical Sub-committee in Dublin met 18 times.

"The Committee are able to state that the whole chemical and Galenical processes of the Pharmacopœia, with the exception of some old-established ones which admit neither of doubt nor improvement, have been subjected to experiment, some of them by more than one Sub-committee.

"Important differences between the existing Pharmacopœias of the three Colleges of Physicians rendered it imperative on the Committee to settle several difficult questions, in order to effect a uniform system for the three divisions of the kingdom.

"The first was the system of weights and measures. In all the existing Pharmacopœias, the apothecaries' measures have been adopted or deduced from the "imperial standard" of ordinary trade in this country; and in the last edition of the Dublin Pharmacopœia, in 1850, a similar change was effected in the apothecaries' weights. The Committee resolved to carry through the change begun in the Dublin Pharmacopœia, by assimilating to one another in value the smaller weights and smaller measures. Adopting the imperial pound and ounce, they have divided the ounce weight of 437.5 grains, as all the Pharmacopœias had previously divided the corresponding ounce measure, into the convenient subdivisions of pharmacy; so that the drachm is the 8th part, and the grain the 480th part of the ounce.

"The weights and measures thus correspond with one another throughout all denominations under a pound. It will be seen that in this system the drachm and grain are about one eleventh less than they were; and that the drachm is nearly double, and the grain about an eleventh less than, the drachm and the grain of the imperial standard. The Committee, however, satisfied themselves that no material inconvenience could arise from the latter circumstance, because the imperial drachm and grain are little used in any trade; and as to the alteration of their value in pharmacy, the inconvenience will be little, and only temporary, because a proportionate change has been made in every process of the Pharmacopœia in which it appeared to be important; nor will any inconvenience arise to the physician or surgeon in their prescriptions, as the difference of an eleventh of a dose is a matter of no moment in regard to any remedy.

"The Committee did not adopt this system without taking into account the strong recommendations they received, both in and out of the medical profession, to show an example to the country at large, by adopting a decimal system of weights and measures. The Committee were strongly impressed with the great advantages of such a system, both in pharmacy and physic; but they were not prepared to say what decimal system should be adopted; and, on the whole, they were of opinion that the Legislature, and not the General Council, should take the lead in this matter.

"Another important difference between the existing Pharmacopœias occurs in the nomenclature of the articles of the *Materia Medica*. As numerous changes were thus inevitable, the Committee have not hesitated to add others, whenever they could, by doing so, either consult the convenience of the pharmaceutical chemist and medical practitioner, or put an end to a positively false description.

"A third and more serious difference exists among the Pharmacopœias of the Colleges, in the strength of preparations bearing the same or similar names. In this branch, too, of their duty, as amalgamation involved numerous changes in one division or another of the country, the Committee did not hesitate to make further changes, when they could thus secure the ultimate convenience of all members of the medical profession, as well as the safety of the public. The trouble to which practitioners will consequently be put for a time, will be partly compensated by greater simplicity and convenience for the future. It occurred to the Committee that all risk to the public would be avoided, and extreme facility to the practitioner attained, by so framing the formulæ for the preparations and compounds, that all articles under one Galenical form should admit of being fitly prescribed in the same dose. Difficulties of detail have prevented this convenient system from being carried out to the full extent; but it has been attended to as far as possible, and increased facility in prescription will be found to have been thus attained.

"The Committee must here add, that it will be incumbent either on themselves or on the General Medical Council, to publish a warning to all pharmaceutical chemists and druggists, that, on the publication of the Pharmacopœia, it will be impossible for them to discharge their duties to the public safely, unless they destroy or alter all pharmaceutical preparations they may have in store, which have been made according to present formulæ, and the strength of which is altered in the new Pharmacopœia. And a further caution must be given to all medical practitioners, that it will be hazardous for them to exercise their profession without making themselves acquainted with all changes made in the strength of official preparations, which changes will be carefully noticed under each article.

"If the Council take into account the great extent of inquiry which the Committee have had to undertake, the necessity of consulting the opinions of three separate Sub-committees, far distant from one another, and the prior demands of a professional nature on the time and attention of all their members, no surprise can be felt that a period of three years and a half has been required to complete the work entrusted to them.

"The performance of numberless experiments, the expense of Sub-committee meetings, of two conferences of the united Sub-committees, of extensive conjunct investigations in Dublin, the remuneration of Secretaries, and sundry other less important charges, have involved heavy outlay and obligations, which will be much increased presently by the charges for printing and publishing the Pharmacopœia. After attentively considering in what manner the probable cost may be defrayed at least charge to the members of the medical profession, the Committee determined that the property of the work should be retained in the possession of the Medical Council.

"Here, however, they have encountered a difficulty which has occasioned unforeseen delay. A doubt arose both as to the Pharmacopœia Committee having the legal right to make contracts with printers and others in the name of the Council, and as to any proceeding on the part of the Committee being sufficient to secure the copyright of the work in the Council.

"As instructed by the legal adviser of the Council, the Committee are inclined to think that the Pharmacopœia ought to be laid before the Council at a general meeting, and formally sanctioned by them; and contracts must be entered into either by the Council itself, or by parties to be duly authorized to act in the Council's name.

"Other legal questions have also arisen as to the copyright of the Pharmacopœia, and the power of the Council to prohibit invasion of it either wholly or partially.

"On all these doubtful points it was found necessary to take legal advice; this has been done with the sanction of the President of the Medical Council; and the Committee hope to place the result before the Council at one of its early meetings.

"Another question has also arisen, which involves essentially the nationality of the Pharmacopœia. The Medical Act does not contain any statutory injunction, that, after the publication of the Pharmacopœia, the Pharmacopœias of the Colleges of Physicians shall cease to have effect, and that pharmacy shall be practised according to the formulæ of the 'British Pharmacopœia.'

"Now, the London Pharmacopœia is enjoined as the standard throughout England, by an order of Her Majesty's Privy Council; the Dublin Pharmacopœia is, by statute, imperative as the standard in Ireland; and in Scotland the Edinburgh Pharmacopœia is, by use and wont, as exclusively the standard, although it was never made so by statute or charter.

"The Council will therefore perceive that there will be nothing to hinder any of the Colleges from republishing its Pharmacopœia, and nothing to prevent pharmaceutic chemists, apothecaries, and others, from using either that or the latest edition of the same, except public spirit and private discretion. It will, therefore, be for the Council to determine whether the 'British Pharmacopœia' should issue as a discretionary guide, or should be fixed as the national standard by the Legislature. And should the Council resolve to adopt the latter alternative, which seems to be the more advisable course, the Committee have to add, that no time should be lost in obtaining a short Act for the purpose during the present session of Parliament. "R. CHRISTISON, *Chairman*."

The Report of the Pharmacopœia Committee was received, and entered on the minutes.

Mr Ouvry, the solicitor, attended, and read the case submitted to, and the opinion of, counsel concerning the copyright and other papers bearing on the "British Pharmacopœia."

The "Business Committee" of the last meeting of the General Council held in 1861 was reappointed—viz., Dr Andrew Wood (Chairman), Mr Teale, Dr Embleton, Dr Thomson, Dr Corrigan.

The Education Committee was reappointed, consisting of all the members of the General Council.

A Finance Committee was appointed, consisting of Dr Burrows (Chairman), Dr Sharpey, Dr A. Smith, Dr Andrew Wood, Mr Arnott.

The Committee on amendment of the Medical Acts was reappointed, consisting of the following members:—Dr Corrigan (Chairman), Dr Thomson, Dr Storrar, Dr Apjohn, Dr Burrows, Dr Acland, Dr Andrew Wood, Dr Sharpey, Mr Hargrave.

Mr Ouvry was requested to lay before the General Council a draft of a case proposed for the opinion of counsel, with reference to the Educational Clauses of the Medical Act, sects. 18 (and schedule A therein referred to), 20, 21, 22, and 24.

The President, and Dr Christison as Chairman of the Pharmacopœia Committee, accompanied by the solicitor to the General Council, were requested to wait on the Secretary of State for the Home Department, to point out to him the position of the Council in reference to the publication of the Pharmacopœia, and to ask him to take such steps as may be necessary to enable the General Council to comply with section 54 of the Medical Act.

A Committee was appointed to consider the mode of publication of the

"Register," and, if possible, to suggest some plan to secure its more general circulation.

Moved by Dr Andrew Wood, *seconded* by Dr Alex. Wood, and *negated*,—"That reporters be admitted to the meetings of the General Council."

Dr Andrew Wood required that the names of the majority and minority should be entered on the minutes.

Majority.—The President, Dr Burrows, Mr Cooper, Dr Acland, Dr Bond, Dr Embleton, Dr Storrar, Mr Watt, Mr Syme, Dr Thomson, Dr Smith, Mr Hargrave, Dr Leet, Sir Charles Hastings, Dr Sharpey, Dr Christison. *Minority*.—Dr Alexander Wood, Dr Andrew Wood, Dr Apjohn, Dr Corrigan, Mr Teale, Dr Stokes.

It was referred to a Committee to consider and report whether any and what steps should be taken to remove from the Medical Register the names of persons who may "have been guilty of infamous conduct in any professional respect."

Minutes of Meeting, Thursday, May 15, 1862.

The President stated that the Secretary of State for the Home Department had consented to receive the deputation respecting the Pharmacopœia, appointed at yesterday's meeting of the Council, to-morrow, at half-past two o'clock.

Some routine business having been transacted, the Council adjourned.

Minutes of Meeting, Friday, May 16, 1862.

Dr Sharpey presented the following Report from the Finance Committee, in reference to the expense of printing the General Register:—

The Committee recommend that estimates be obtained, from three different printers, of the following charges—viz.,

1. Cost of purchase of the types employed in printing the General Register.
2. Annual cost of keeping the type standing.
3. Cost per sheet of annual additions.

W. SHARPEY, *Chairman*.

Dr Corrigan presented the following Report from the Medical Acts Amendments Committee:—

The Medical Acts Amendments Committee beg leave to report that they have given their most attentive consideration to the several amendments proposed to Clause 40, and that they recommend the following amendment to that clause:—

"Any person who shall take or use the name or title of Physician, Doctor of Medicine, Licentiate in Medicine and Surgery, Bachelor of Medicine, Surgeon, General Practitioner, or Apothecary, or any name, title, addition, or description, implying that he is qualified to practise any branch of Medicine or Surgery, *such name, title, addition, or description not having been granted by any of the licensing bodies mentioned in Schedule A of this Act*, shall, upon a summary conviction for any such offence, pay a sum not exceeding £20.

"N.B.—The heading of Section 40, so altered, might be—Penalty for using medical or surgical designations by persons not qualified under Schedule A."

The Committee beg further to recommend that the several reports of the Medical Acts Amendments Committees of 1860, 1861, and the present year, be referred to the Executive Committee, with instructions to consult Parliamentary solicitors, with the view of preparing a draft Bill, to be transmitted to the respective Branch Councils, for their consideration and observations. That such draft Bill, with any amendments proposed, be re-transmitted by the respective Branch Councils to the Executive Committee, in time to enable the Executive Committee to have a draft Bill ready for being submitted to the General Medical Council at its next annual meeting.

J. D. CORRIGAN, *Chairman*.

The Report of the Medical Acts Amendments Committee was received, and entered on the minutes.

Dr Storrar presented the following Report from the Committee appointed "to consider and report whether any and what steps should be taken to remove from the Medical Register the names of persons who may have been guilty of infamous conduct in any professional respect :"—

On examining Section 29 of the Medical Act, it appears to the Committee that, while the General Medical Council are authorized, if they see fit, to erase, without further inquiry, the name of a medical practitioner from the Medical Register who shall be convicted in England or Ireland of any felony or misdemeanour, or in Scotland of any crime or offence, the name of a medical practitioner charged with infamous conduct in any professional respect can only be erased when, after due inquiry, such medical practitioner shall be judged by the General Council to have been guilty of the infamous conduct in question.

The Committee are of opinion that the General Council, in relation to persons charged with infamous conduct in any professional respect, are intended to exercise judicial functions, and that it would not be consistent for the Council to combine with the duties of judges the functions of public prosecutors, even if the constitution of the General Council and the means at their disposal were such as to render it practicable for them to initiate proceedings against registered practitioners chargeable with infamous conduct.

The Committee are further of opinion that all such cases should be left to be taken up by persons unconnected with the Medical Council, who should be required to produce the evidence necessary to enable the Council to adjudicate upon them, having regard to the Standing Orders of the Council (section 8), "Removal of a name from the Register." J. STORRAR, *Chairman*.

The Report was received, and ordered to be printed on the minutes.

The President informed the Council that the Secretary of State for the Home Department had listened with great attention to the representations of the deputation respecting the Pharmacopœia, and that he had desired the solicitor to send him the draft of the proposed Bill, with a letter explaining the grounds on which the Council sought legislative interference.

Moved by Dr Acland, and *seconded* by Dr Storrar,—"That the following resolutions be added to the Standing Orders of the General Council :"—

1. That it is within the province of Branch Councils to obtain the opinion of counsel upon all points on which they require such opinion for their guidance.

2. That when the points on which they require an opinion refer to matters belonging to the General Council, such Branch Council shall forward to the other Branch Councils a copy of the case to be submitted to counsel before it is so submitted.

3. That if such case be submitted to counsel with the concurrence of the three Branch Councils, the expense shall be borne by the General Council.

"The previous question" was then *moved* by Mr Arnott, *seconded* by Dr Andrew Wood, and *carried*.

Read the following letter from Richard Hughes, Esq., M.R.C.S. Eng. and L.R.C.P. Edin. .—

10 Clarence Square, Brighton, Sept. 21, 1861.

SIR,—I am desirous of calling your attention to the declaration recently adopted by the College of Physicians in Ireland as requisite to be taken by all candidates for its licence. It is thus reported in the *Lancet* of August 10, 1861 :—

"I engage not to practise any system or method (so-called) for the cure or alleviation of disease, of which the College has disapproved. And I solemnly and sincerely declare, that should I violate any of the conditions specified in this declaration, so long as I shall be either a Licentiate or Fellow of the College, I thereby render myself liable and shall submit to censure of the College, pecuniary fine (not exceeding £20), or expulsion, or surrendering of the diploma, whichever the President and Fellows of the College, or the majority of them, shall think proper to inflict."

This resolution makes the first granting and subsequent tenure of the diploma of this College dependent on an avoidance of all systems of medicine disapproved

of by the College, by which, of course, homœopathy is mainly intended. Now such a course of conduct is in direct contravention of clause 23 of the Medical Act.

It is well known that clause 23 was introduced into the Medical Act expressly to prevent any one being hindered in obtaining or deprived of his diploma on the ground of his belief in homœopathy. The King's and Queen's College of Physicians in Ireland, therefore, in requiring this declaration to be taken by all candidates for its license, has offended against both the letter and spirit of the Medical Act. And I call upon you, Sir, as President of the Medical Council, to report this proceeding to the Privy Council, that the proper measures may be taken for checking or punishing this breach of the law.—I am, Sir, your obedient servant,

RICHARD HUGHES.

(Registered under the Medical Act.)

To the President of the Medical Council.

Dr A. Smith, the representative of the King and Queen's College of Physicians in Ireland, explained that the declaration complained of was of very old date; that the College has never expressed any opinion on any theory of medicine, and that therefore it never did impose any restraint on the practice of medicine by any candidate; and, moreover, that the declaration referred to does not exist in the present code of bye-laws.

Moved by Dr Corrigan, *seconded* by Sir C. Hastings, and *agreed to*,—"That the Council decline to take any steps in the above matter."

Minutes of Meeting, Saturday, May 17, 1862.

Moved by Dr Andrew Wood, *seconded* by Dr Embleton, and *agreed to*,—"That the returns of the number and names of candidates who have passed their respective final examinations, and the number of those who have been rejected, which have been received in compliance with the twenty-third recommendation of the Medical Council, and also the returns received in compliance with the sixteenth recommendation, be referred to a committee, who shall report upon them to the General Council."

Moved by Dr Stokes, *seconded* by Dr Apjohn, and *agreed to*,—"That a committee be appointed to report on the returns received, in accordance with the following resolution of the Medical Council:—

"That the Registrar be directed to communicate with the several colleges and bodies mentioned in schedule A of the Medical Act, with the view of ascertaining whether they have taken any steps to determine how far the certificates given to students for attendance on hospitals or lectures are granted on *bonâ fide* attendance.'" (See minutes of General Committee on Education, for Monday, July 1, 1861, sect. 2, p. 7.)

Moved by Mr Syme, and *seconded* by Dr Storrar,—"That the regulations lately issued by the College of Surgeons of England for the qualification of candidates for their license are not in accordance with the recommendations of the Medical Council, and are not 'such as to secure the possession by persons obtaining such qualifications of the requisite knowledge and skill for the efficient practice of their profession.'"

Amendment *moved* by Dr Thomson, and *seconded* by Dr Sharpey,—"That the regulations lately issued by the College of Surgeons of England for the qualification of candidates for their licence are not in accordance with the recommendations of the Medical Council, and that the College of Surgeons be requested to re-consider the grounds on which they have departed from the recommendations of the Council, and to state whether or not the regulations lately issued by the College in reference to professional study are intended to be merely of a temporary nature, or whether it is the intention of the college, at an early period, to bring their regulations into entire conformity with the standard recommended by the Council."

"The previous question" was then *moved* by Dr Corrigan, *seconded* by Dr Apjohn, and *carried*.

Dr Andrew Wood required that the names of the majority and minority should be entered on the minutes.

Majority.—Mr Arnott, Mr Cooper, Dr Acland, Dr Bond, Dr Embleton, Mr Watt, Dr A. Smith, Mr Hargrave, Dr Apjohn, Dr Corrigan, Mr Lawrence, Mr Teale, Dr Stokes. *Minority.*—Dr Storrar, Dr Alexander Wood, Dr Andrew Wood, Mr Syme, Dr Thomson, Dr Leet, Dr Sharpey, Dr Christison.

Minutes of Meeting, Monday, May 19, 1862.

Moved by Dr Leet, and *seconded* by Mr Syme,—“That the General Medical Council having, by its recent finding, declared the nature of the qualification conferred by the licence of the Apothecaries’ Hall of Dublin to be ‘a purely legal question,’ instructions be now given to the solicitors of the Council to prepare, with the assistance of a select committee, a draft case for the opinion of counsel, in reference to the question asked by the Director-General of the Army Medical Department in his letter of the 22d of June 1861.”—The motion having been put, was negatived.

Read the following letter from the Branch Council for Scotland, which was ordered by the Branch Council for England to be referred to the General Council (See minutes of English Branch Council, No. 15, for 27th December 1861, sect. 5, p. 6.) :—

Scottish Branch of General Council of Medical Education and Registration,
28 Albany Street, Edinburgh, Dec. 7, 1861.

SIR,—At a meeting of this Branch of the Medical Council held to-day, I was directed to write to the English Branch Council, to ascertain whether their attention has been called to the subjoined regulations of the Royal College of Surgeons of England, viz. :—

“PROFESSIONAL EDUCATION.

“I.—Candidates who shall commence their professional education on or after 1st October 1862 will not be allowed to register the commencement of attendance on lectures or hospital practice before they have passed an examination in general literature, in conformity with the regulation of the Council in relation thereto.

“II.—The following will be considered as the commencement of professional education :—1. Attendance on the practice of an hospital, dispensary, or other public institution, recognized by this College for that purpose.¹ 2. Instruction as the pupil of a member of one of the Royal Colleges of Surgeons in the United Kingdom, or of the Faculty of Physicians and Surgeons of Glasgow.¹ 3. Attendance on lectures on Anatomy, Physiology, Chemistry, or Natural Philosophy, by lecturers recognised by this College.”—(*The Lancet*, Sept. 21, 1861, p. 275.)

I have to request that this letter may be submitted to next meeting of the English Branch Council.—I am, Sir, your obedient servant,

(Signed) WILLIAM ROBERTSON.

Dr Hawkins, 32 Soho Square, London.

(Branch Registrar, Scotland.)

Moved by Dr Thomson, and *seconded* by Dr Sharpey,—“That the regulations lately issued by the College of Surgeons of England, for the qualification of candidates for their license, not being in accordance with the recommendations of the Medical Council, the College of Surgeons be requested to re-consider the grounds on which they have departed from the recommendations of the Council, and to state to the Council in how far the regulations recently issued are to be regarded as merely temporary, and in how far the Council may expect the College at an early period to bring their regulations into conformity with the standard recommended by the Council.”

Amendment *moved* by Dr Corrigan, and *seconded* by Dr Stokes,—“That it be an instruction to the Executive Committee to obtain returns of the regula-

¹ “Attention being paid in either of these cases to Practical Pharmacy.”

tions relative to education and examination from the several licensing bodies mentioned in Schedule A; to ascertain in what particulars the regulations of any of those bodies may differ from the recommendations of the General Medical Council; to request from those corporate bodies whose regulations so differ such observations or explanations as they may deem fit to offer; and to submit the correspondence, with their report thereon, to the next meeting of the General Medical Council.”—*Amendment carried.*

Dr Andrew Wood required that the names of the majority and minority should be entered on the minutes.

Majority.—The President, Mr Arnott, Mr Cooper, Dr Acland, Dr Bond, Dr Embleton, Dr A. Smith, Dr Apjohn, Dr Corrigan, Mr Lawrence, Mr Teale, Dr Stokes. *Minority.*—Dr Burrows, Dr Storrar, Dr Alexander Wood, Dr Andrew Wood, Mr Watt, Mr Syme, Dr Thomson, Mr Hargrave, Sir Charles Hastings, Dr Sharpey, Dr Christison.

Moved by Dr Storrar, *seconded* by Dr Corrigan, *and agreed to*,—“That the draft case respecting the educational clauses of the Medical Act, as returned from the solicitors, be approved, and submitted to counsel.”

Moved by Dr Storrar, *seconded* by Dr Alexander Wood, *and agreed to*,—“That the counsel to whom the case shall be referred be the Solicitor-General and Mr Selwyn.”

Moved by Dr Stokes, *seconded* by Mr Hargrave, *and agreed to*,—“That the several reports of the Medical Acts Amendments Committees of 1860, 1861, and the present year, be referred to the Executive Committee, with instructions to consult parliamentary solicitors, with the view of preparing a draft Bill, to be transmitted to the respective Branch Councils, for their consideration and observations. That such draft Bill, with any amendments proposed, be re-transmitted by the respective Branch Councils to the Executive Committee, in time to enable the Executive Committee to have a draft Bill ready for being submitted to the General Medical Council at its next meeting.”

Moved by Dr Alexander Wood, *seconded* by Dr Storrar, *and agreed to*,—“That in all cases where returns are required by the Council from the bodies in Schedule A to the Act, the Registrar of the Council be directed to give notice to the several bodies at least one month before such returns have to be rendered.”

Minutes of Meeting, Tuesday, May 20, 1862.

Moved by Dr Storrar, and *seconded* by Dr Sharpey,—“That inasmuch as persons deriving qualifications to practise physic from the Royal College of Physicians of London are legally entitled to practise surgery, it is the duty of the said College to take steps to secure that such qualifications shall not be conferred on persons whose attainments in surgery have not been duly ascertained.”

Amendment moved by Mr Syme, and *seconded* by Dr Alexander Wood,—“That the Council are fully satisfied, by the statement of Dr Burrows, that the College of Physicians are taking proper steps for ascertaining that their licentiates are qualified to exercise all the powers of practice conferred upon them.”—*Amendment negatived.*

The original motion was then put and *negatived.*

A memorial from the Gloucestershire Medical and Surgical Association, respecting Clauses 15 and 40 of the Medical Act, was read, and was referred to the Executive Committee.

Letters respecting the provisions of the Medical Act were read from Mr McNeice, of Canada, Mr S. Gower, of Natal, and Dr Anderson, of Penang. These letters were referred to a Committee.

Moved by Mr Syme, and *seconded* by Mr Hargrave,—“That the Council adopt the following resolutions:—

1. “That the Council has resolved that no license to practise Medicine or Surgery shall be conferred upon any one who has not completed four years of professional study.

2. "That the Council has also resolved that apprenticeship or pupilage shall not constitute the commencement of this professional study.

3. "That the College of Surgeons of England has lately issued regulations to the candidates for their diploma, which allow apprenticeship or pupilage to constitute the commencement of professional study; and also allow another year to be constituted by attendance upon a recognised hospital, so as to limit the period of study at a medical school to two years and three months, or fifteen months in all.

4. "That the Council having declined to notice this departure from their requirements, and thus recognised an independent power of action in one of the licensing bodies, it is, therefore, unnecessary to take any further step for interpreting the educational clauses of the Medical Act."—The motion was put and *negatived*.

Minutes of Meeting, Wednesday, May 21, 1862.

Moved by Dr Christison, *seconded* by Dr A. Smith, and *agreed to*,—"That the manuscript of the Pharmacopœia having been put before the Council by the chairman of the Pharmacopœia Committee, the Council adopt the work as the 'British Pharmacopœia,' which the Council was directed by the Medical Act, sect. 54, to cause to be published."

A report of the proceedings of the Committee of the whole Council held this day as to the Pharmacopœia having been read, it was *moved, seconded, and agreed to*,—"That the report just read be adopted."

Moved by Dr Acland, *seconded* by Dr Andrew Wood, and *agreed to*,—"That in answer to a question which has been submitted to the Council concerning the proper qualifications of public vaccinators, the Council have to observe that, by the regulations of the Privy Council, dated 1st December 1859, and interpreted by a letter to the Medical Council from the Privy Council, dated 8th November 1860, 'except where the Privy Council, for reasons brought to their notice, see fit in particular cases otherwise to allow, no person shall in future be admitted as a contractor for vaccination unless he possess the same qualifications as are required by the order of the Poor-law Commissioners as qualifications for a district medical officer,' and produce also a special vaccination certificate; nor can any person be admitted as deputy to a contractor for vaccination, but 'under the same conditions as are appointed for the admission of a contractor.'"

Dr Alex. Wood presented the report of the Committee on the sale and publication of the Register.

REPORT.

"Your Committee have to report that the sale of the Register in 1861 was, as to that of 1860, as follows:—

" Number of copies sold in 1860	768
" " " 1861	532
Less in 1861 than in 1860, by	236
" Amount by sales in 1860	£165 17 8
" " " 1861	93 8 6
Less in 1861 than in 1860 by	£72 9 2

"Your Committee are glad to be informed that there is a prospect of the sale increasing this year.

"Your Committee have considered the recommendation of the Finance Committee, contained in the minutes of the Council for 16th May, and beg to suggest that it be remitted to the Executive Committee to ascertain whether the printing could not be executed at a lower rate than at present.

"It is further recommended that the President be requested by the Council to write to the Secretary of State for the Home Department, pointing out to him the inconvenience that has arisen, and is likely to arise, from the clerks of court and registrars of births, deaths, and marriages not being necessarily possessed of copies of the Medical Register. ALEXANDER WOOD, *Chairman*."

Moved by Dr Alexander Wood, *seconded* by Sir Charles Hastings, and *agreed to*,—"That it be remitted to the Executive Committee to ascertain whether the printing of the Medical Register could not be executed at a lower rate than at present."

Moved, by Dr Alexander Wood, *seconded* by Sir Charles Hastings, and *agreed to*,—"That the Council request the President to write to the Secretary of State for the Home Department, pointing out to him the inconvenience that has arisen, and is likely to arise, from the clerks of county courts, coroners, and registrars of births, deaths, and marriages not being necessarily possessed of copies of the Medical Register."

Moved by Dr Andrew Wood, and *seconded* by Dr Embleton,—"That it be remitted to the Executive Committee to take steps to secure that copies of the Register be placed for sale in the hands of the principal booksellers in all towns in the United Kingdom where county courts and assize courts are held."—*Motion negatived*.

Dr Andrew Wood required that the names of the majority and minority should be entered on the minutes.

Majority.—Dr Burrows, Dr Acland, Dr Bond, Dr Storrar, Dr Alexander Wood, Mr Watt, Dr Thomson, Sir Charles Hastings, Dr Sharpey, Mr Teale, Dr Christison, Dr Stokes.—*Minority*.—Mr Arnott, Mr Cooper, Dr Embleton, Dr Andrew Wood, Dr A. Smith, Mr Hargrave, Dr Apjohn, Mr Lawrence.

The Report of the Committee on the sale and publication of the Register was adopted.

Moved by Dr Acland, *seconded* by Dr Stokes, and *agreed to*,—"That the Executive Committee be directed to prepare a list of persons, public officers, and public institutions, to whom a copy of the Register shall be transmitted annually, in the name of the Council, and that such list be annually inserted in the Register."

Moved by Dr Storrar, *seconded* by Dr Burrows, and *agreed to*,—"That the Report be adopted of the Committee appointed to consider whether any and what steps should be taken to remove from the Medical Register the names of persons who may have been guilty of infamous conduct in any professional respect, which was presented to the Council at its meeting on the 16th instant."

Dr Stokes presented the Report of the Committee appointed to examine the answers of the licensing bodies in reference to the following resolution of the Medical Council, viz., "That the Registrar be directed to communicate with the several Colleges and bodies mentioned in Schedule A of the Medical Act, with the view of ascertaining whether they have taken any steps to determine how far the certificates given to students for attendance on hospitals or lectures are granted on *bonâ fide* attendance."—(See Minutes of General Committee on Education for Monday, July 1, 1861, sect. 2.)

REPORT.

The Committee appointed to report to the General Medical Council on the answers received from the various licensing bodies in Schedule A, with reference to the question as to what steps they have taken to determine how far certificates of attendance on hospitals and lectures are granted on *bonâ fide* attendance, beg to state that answers have been received from most of those bodies. These answers the Committee have considered.

These letters were in some cases received from the respective registrars or secretaries of the above-mentioned bodies; in other instances, from their representatives in the Council.

In the Universities of Cambridge and Dublin, in which the great majority of the medical students are passing their terms in Arts, regularity in attendance is ensured; in Dublin, by roll-call by such professors of the School of Physic over whom the University has direct jurisdiction; and in Cambridge by inscription of names, and by delivery of cards bearing the student's name.

In Oxford the majority of the examiners decide on the question as to how far the certificate is satisfactory.

The remaining bodies may be divided into two categories. In one, various modes are adopted to ensure regularity of attendance, which must, to a great degree, effect the object. Under this head may be placed the Universities of Edinburgh, Aberdeen, Glasgow, and Durham, and the Royal College of Surgeons of Edinburgh.

In the second category may be placed those bodies which rely on the care and trustworthiness of those teachers whose names appear on the certificate. Under this head may be enumerated the Universities of London and St Andrews; the Royal College of Physicians, London; the Royal College of Surgeons of England; the Faculty of Physicians and Surgeons of Glasgow; the Society of Apothecaries of London; and the Apothecaries' Hall, Dublin.

The Committee are not yet in a position to state what is the practice, in reference to this question, of the King and Queen's College of Physicians of Ireland, the Royal College of Surgeons of Ireland, and the Queen's University in Ireland. It may, however, be stated, that in those bodies to which Schools of Medicine are attached, attention is paid—though by the adoption of different methods—to ensure a *bonâ fide* attendance of those students to whom certificates are granted. Great difficulty arises on the part of those bodies by which licenses are granted, yet where no School exists under their immediate jurisdiction, in determining the question of *bonâ fide* attendance. It is plain, further, that in cases of attendance at private schools, the certificates of the teachers who grant them have to be received by the licensing body on the responsibility of the granters of the document. It is not to be lost sight of, that licensing bodies have every day presented to them certificates from schools at a distance from them, and over which they have no power. These considerations, especially when the present and obvious overloading of the curriculum of study enforced in these countries is borne in mind, make the attempt at an effective supervision of class-room or hospital attendance a matter of great difficulty. In the opinion of the Committee, the means most likely to lessen the evils which necessarily flow from a loose system of granting or receiving certificates, must be sought for in some important modifications on the part of the licensing bodies of the curricula now enforced.

W. STOKES, *Chairman*.

Moved by Dr Stokes, *seconded* by Dr Apjohn, and *agreed to*,—"That the Report be received, and that the consideration of it be deferred to the next sitting of the Council in Committee on Education."

Dr Burrows presented the following

REPORT.

The Finance Committee beg leave to present, in the Table subjoined, a balance statement of the income and expenditure of the year 1861, compared with the income and expenditure of the preceding year; also an estimate, as far as the committee are able to judge, of the probable income and expenditure for the year 1862:—

		Income for the year 1860.				Income for the year 1861.				Estimated income for the year 1862.							
		£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.				
Fees received by—																	
Branch Council for England		2149	5	0	...			2696	10	0	...	2400	0	0			
" " Scotland		547	10	0	...			644	15	0	...	600	0	0			
" " Ireland		507	15	0	...			676	10	0	...	650	0	0			
					3204	10	0			4017	15	0		3650	0	0	
Dividends received by																	
Branch Council for England		571	5	0	...			600	15	11	...	600	0	0			
" " Scotland		87	9	2	...			82	1	9	...	80	0	0			
" " Ireland		90	13	9	...			72	5	11	...	70	0	0			
					749	7	11			755	3	7			750	0	0
Sale of Registers			165	17	8	...		93	8	6	...		80	0	0
Penalties			14	10	0	...		5	1	3					
Total receipts . . .		...			4134	5	7	Overdraft from India, B. C. for Scotland.		0		3	0				
Excess of ex- penditure over income.					1327	4	2										
					£5461	9	9			£4871	11	4			£4480	0	0

Expenses of—	Expenditure for the year 1860.				Expenditure for the year 1861.				Estimated expenditure for the year 1862.	
	£	s.	d.	£	s.	d.	£	s.	£	s.
General Council	...	...	...	3862	1	0	...	...	3000	0
Branch Council for England	769	13	10	...	...	...	658	14	650	0
" " Scotland	254	6	10	...	...	...	*370	16	314	0
" " Ireland	575	8	1	...	...	...	398	16	400	0
				1599	8	9	1428	7	4364	0
							4749	6		
							Balance	122	Balance	116
							4	8		0
Total expenditure	£5461	9	9		£4871	11	4		£4480	0

* This includes £55, 15s. due to the members of Council for attendance and travelling expenses in 1860.

The Committee have received from Dr Garrod the following statement of the accounts of the Pharmacopœia Committee, which they have duly examined, and found to be correct. The vouchers produced by Dr Garrod have been delivered to the Registrar:—

RECEIPTS.		EXPENDITURE—continued.	
1859.		Brought forward	£505 15 6
Received by Mr Nussey, and afterwards paid to Dr Garrod (in part)	£500 0 0	July 1860.	
June 1860.		Dublin Delegates, viz.:	
Received from Mr Green through Mr Nussey	500 0 0	Dr Apjohn	£37 16 0
	£1000 0 0	Dr Williams	37 16 0
		Dr Neligan	37 16 0
			113 8 0
		London Delegates, viz.:	
		Sir J. Clark	15 15 0
		Mr Nussey	15 15 0
		Dr Farre	15 15 0
		Dr Garrod	15 15 0
		Mr Squire	15 15 0
			78 15 0
		Expenses of Branch Committees:—	
		Oct. 1861.	
		London Secretary	51 6 11
		Edinburgh Secretary	35 6 3
		Dublin Secretary	81 19 1
		Conference, 1861.	
		General Secretary for Beadle's fees	3 15 6
			£871 6 3
		Balance in hand	128 13 9
			£1000 0 0

* Indorsed cheques are at the Branch Bank of England. (See letters from Mr Nussey, June 29, 1860.)

We have this day compared these accounts with the several vouchers, and found the same to be correct.

May 19, 1862.

W. SHARPEY, }
A. SMITH, } Auditors.

With respect to the demand likely to be made on the funds of the Council on account of the publication of the Pharmacopœia, no approximate estimate can be offered by the Committee.

The attention of the Committee having been drawn to the cost of publishing the monthly lists of new entries on the Local Registers, it has appeared to the Committee that the advantage derived from such frequent publication is not commensurate with the expense incurred. The Committee accordingly recommend that henceforth the publication be quarterly; and, with a further view to economy, they suggest that the quarterly lists of the three Branch Councils be printed in London, in the same type and form as those used for the General Register.

G. BURROWS, Chairman.

Moved by Dr Sharpey, seconded by Dr Andrew Wood, and agreed to,—“ That,

in accordance with the recommendation of the Finance Committee, printed lists of new entries on the Local Registers be henceforth issued not oftener than once a-quarter."

"That the quarterly local lists, authenticated by the Registrars of the Branch Councils, be transmitted in manuscript to the Registrar of the General Council, who shall cause the same to be printed in London, in the type and form used for the General Register, and copies to be sent to the members of the Council."

Moved by Dr Sharpey, *seconded* by Dr Andrew Wood, and *agreed to*,—"That the Report of the Finance Committee be received and adopted."

Dr Alexander Wood presented the following Report of the Committee on communications from the colonies, in regard to the operation of the Medical Act in the Colonies:—

Three such communications have been received—one from Canada, which has been disposed of by the Council; one from Penang, inquiring whether the Medical Act extends to the East India settlements as well as to the colonies and Great Britain; the other from Natal, South Africa, inquiring how far the operation of the Medical Act extends to the British colonies.

An examination of the Medical Act shows that it provides (sect. 31) that—"Every person registered under this Act shall be entitled, according to his qualification or qualifications, to practise medicine or surgery, or medicine and surgery, as the case may be, *in any part of her Majesty's dominions*, and to demand and recover in any court of law, with full costs of suit, reasonable charges for professional aid, advice, and visits, and the cost of any medicines or other medical or surgical appliances, rendered or supplied by him to his patients."

Further, by sect. 32, it is provided that—"After the first day of July 1859, no person shall be entitled to recover any charge in any court of law for any medical or surgical advice, attendance, or for the performance of any operation, or for any medicine which he shall have both prescribed and supplied, unless he shall prove upon the trial that he is registered under the Act."

At a meeting of the General Medical Council, held on the 25th November 1858, a Report by a Committee on Colonial Practitioners was brought up, and on that report the Council came *inter alia* to the following resolution:—"That the recommendation of the Committee to dispense with the provisions of this Act in regard to registration in favour of persons now practising medicine or surgery in any part of her Majesty's dominions other than Great Britain and Ireland, by virtue of any of the qualifications described in Schedule A, and to admit them to registration on payment of a fee of £2 up to the 1st of January 1861, and afterwards on payment of £5, be adopted."

It is therefore evident that, while the Medical Council have offered facilities for the registration of practitioners in the colonies, they have taken no steps to enforce it. It may, however, be doubtful how far a person not registered could recover charges in a colonial court, unless authorized to do so by a local Act.

It is, however, clear that where restrictions are imposed on practice by local Acts, no such restrictions can have any effect on persons practising in the colonies who are registered under the Medical Act, Victoriae 21 and 22, cap. 90.

ALEXANDER WOOD, *Chairman*.

Moved by Dr Andrew Wood, *seconded* by Mr Teale, and *agreed to*,—"That the Report of the Committee on communications from the colonies, with regard to the operation of the Medical Act, be received and adopted."

Dr Embleton presented the following Report of the Committee on the returns from the bodies in Schedule A, in compliance with the 16th and 23d Recommendations of the Report of the General Committee on Education (1861), viz.:—

"That the various educational and licensing bodies be requested to transmit to the Registrar of the General Council returns embodying any alterations

which they may from time to time introduce into their courses of general study and examinations which qualify for the registration of medical students; and that a copy of such returns be sent by the Registrar, as soon as convenient, to each member of the General Council."

"That returns from the licensing bodies under Schedule A be made annually, on the 1st of January, to the General Medical Council, stating the number and names of the candidates who have passed their respective final examinations, and the number of those who have been rejected."

Your Committee have to report—

1st, That returns in compliance with the 16th Recommendation have been received from the following bodies, viz.:—the University of London; the Royal College of Physicians, and the Royal College of Surgeons, Edinburgh; the Faculty of Physicians and Surgeons of Glasgow; the King and Queen's College of Physicians, and the Royal College of Surgeons, Ireland; the Apothecaries' Hall, Dublin; the University of Dublin; the Queen's University, Ireland.

In the present somewhat unsettled state of the regulations of the various bodies, and in consequence of the recent proceedings of the Council, it appears advisable to do little more than lay these returns before the Council. Your Committee would, however, recommend that, before the next general meeting of the Council, each body in Schedule A be requested to send in its latest regulations, with a manuscript reference to, and explanation of, the alterations that may have been made since their last return; and that the Registrar be requested to give due notice of this requirement to each of the bodies.

2d, That returns in compliance with the 23d Recommendation have been received from the subjoined bodies, viz., the Royal Colleges of Physicians of England and of Edinburgh; the King and Queen's College of Physicians in Ireland; the Royal Colleges of Surgeons of England and of Edinburgh; the Faculty of Physicians and Surgeons of Glasgow; the Royal College of Surgeons in Ireland; the Apothecaries' Society of London; the Apothecaries' Hall of Ireland; the Universities of Oxford, Cambridge, Durham, London, Edinburgh, Glasgow, and Dublin.

The return from the Royal College of Physicians of Edinburgh includes the number and names of students who have obtained the license of this College, and the number of those rejected, from May 1, 1861, to May 10, 1862.

This return gives the number and names of those who have obtained the license of the College in connexion with the license of the Royal College of Surgeons, and also the number and names of those who have obtained the license of the same College in connexion with the diploma of the Faculty of Physicians and Surgeons of Glasgow, for the same period.

In the two last cases the number of those rejected has unavoidably been omitted.

The return of the Royal College of Physicians of Edinburgh, therefore, not being made up from the 1st of January 1861 to the 1st of January 1862, and being also otherwise imperfect, your Committee are unable to classify it with the other returns received.

No returns have yet been received from the undermentioned bodies, viz., the University of Aberdeen; the University of St Andrews; the Queen's University in Ireland.

This is doubtless owing to some inadvertence, or to the want of due notice for the sending in of the returns, and your Committee beg leave to direct your attention to the great desirability that the bodies in Schedule A should exactly comply with the terms of Recommendation No. 23.

Your Committee have carefully examined the returns sent in, and beg leave to present the general results of their examination in the following tabular form, for convenient reference. The table gives the total number of candidates who have been examined, the number of those who have been rejected, and the number of those who have passed their final examination by those licensing bodies who have sent in returns to the Council.

the Standing Order which requires the adjournment of the Council at six o'clock be suspended."

Moved by Dr A. Smith, *seconded* by Mr Hargrave, and *agreed to*,—"That the sum of £600 be voted by the General Medical Council, in addition to the vote of £500 on the 24th of November 1858, and of a similar amount on the 16th of June 1860, towards defraying the expenses incurred by the Pharmacopoeia Committee."

Moved by Dr Storrar, *seconded* by Dr Sharpey, and *agreed to*,—"That the order for the appointment of the Education Committee be discharged."

Moved by Dr A. Smith, *seconded* by Mr Hargrave, and *agreed to*,—"That the best thanks of this Council are eminently due, and are hereby offered, to the Royal College of Physicians of London, for their obliging and courteous accommodation during the present session of the Medical Council."

Moved by Dr Andrew Wood, *seconded* by Dr Embleton, and *agreed to*,—"That a gratuity of ten guineas be given to the servants of the Royal College of Physicians of London."

The minutes were read and confirmed.

PROCEEDINGS OF THE EDINBURGH OBSTETRICAL SOCIETY.

SESSION XX.—MEETING XI.

May 22, 1861.—Dr KEILLER, *President*, in the Chair.

I. PROTRACTED LABOUR FROM HYPERTROPHY OF THE FETAL KIDNEYS.

The *Secretary* read the following communication from Dr Key of Arbroath:—Mrs R., æt. 25. Strongly built; dark complexion, but clear; always healthy. On 6th March last (1860), I attended her for an abortion at the third month. She had never been pregnant before. She attributed this abortion to a fright she got, having been molested by a man when coming home one night. The abortion showed nothing of any unusual importance.

12th December.—Saw her at 10 P.M. She had been uneasy during the day; no actual labour pains, but an approach thereto. Membranes had ruptured two hours before I saw her. On examination, I found the os dilated to the size of a shilling; not particularly rigid; evidently an abnormal presentation. My finger reached a soft surface, and passed into a fold, either the axilla or groin; passing my hand backwards, I reached with difficulty what I supposed to be the anus. The sphincter was relaxed and did not grasp my finger; on withdrawing it, I found it covered with meconium, which tended to confirm my diagnosis. I left, telling them to call me when required. The patient told me that she was not at the full time. Her husband is a shipmaster, and, after her abortion in spring, went to sea, only coming home in end of April.

13th.—Called at 4 A.M., found pains considerably stronger, but not acting much on os; remained an hour, and then left. To have a dose of castor-oil. All day she remained much in the same state, pains irregular and ineffective. She was quite cheerful, had no headache or sickness, and took a little food. I was not required until I called on Friday forenoon, when I found that the pains had greatly diminished during the night, and that she had slept for some time. Oil had acted freely.

14th.—To-day, towards afternoon, the pains increased in strength and frequency, and apparently the labour was to go on energetically. The os dilated to the size of a penny. I could feel the scrotum and penis, the child's abdomen being towards the abdomen of the mother; the left hip presenting. About 11 P.M. the pains again went off, becoming quite useless. There was still no necessity for any interference, the patient remaining free from any constitutional irritation; I left her to herself. She had a restless night; no sleep; pain often very strong, but not continuous.

15th.—Much in same state all day. Had again castor-oil. No progress made of any consequence. 10 P.M. Tired and worn out. Very sleepy; pains are

very annoying. R. Sol. mur. morph. ʒj. aquæ ʒj.; half to be taken just now, and the other half in an hour if sleep do not follow." The whole was taken as directed. She slept soundly and quietly until 8 A.M. on Sunday morning.

16th.—The pains gradually began again at 11 A.M., and steadily increased in strength. At 2 P.M. I saw her, and resolved to remain with her. There was no motion in the child, and the mother had not felt any for at least two days. Scrotum and penis considerably swollen. The pains continued to be strong and expulsive, and at 4 P.M. the os was fully dilated; still there was but little appearance of the breech making any progress. As the child was apparently dead, there could be little harm in bringing down the left leg, the one I could reach; and, at any rate, were it alive, this would not much affect its chance of life. After considerable difficulty I succeeded in my efforts, and expected to have the control of the labour. I found it of no use; the breech obstinately refusing to move. The appearance of the leg told me that the child had been dead some days. I could only reach the other foetal groin with the point of my finger, high up at the brim of the maternal pelvis; and the little traction I could use on it never moved it. No amount of pulling on the extracted leg had any effect. I gave a dose of ergot as the pains had flagged considerably. Although this produced strong expulsive pains, no progress was made. It was evident that nature had done all she could. I therefore sent for my friend Dr David Arrott, and determined to extract the child. A blunt hook was passed over the right groin. I used a very great amount of force before any impression was made upon the child, and just as the femur gave way under the force, the leg came down. But our difficulties were not over. We had certainly both limbs down, but the right femur was fractured; and, from the former traction, the tibia of the left leg had separated from the femur, leaving four inches of merely soft parts at the knee-joint where no such four inches should be. We were half an hour in completing the birth. After the breech was fairly over the perinæum, the child turned without any assistance: the face going towards the sacrum. We succeeded in extracting without evisceration. The abdomen of the child was greatly enlarged; it was otherwise normal and well grown. I regret that I did not weigh it or take the circumference of its abdomen. On opening it, we found a quantity of serum (say, one pint) in the abdominal cavity, but its great size was found to depend upon enlargement of the kidneys; both were of same size. I was allowed to remove one of them (the right). I could not have said which was largest. On taking it home, it weighed $11\frac{1}{2}$ ounces:—the adult normal kidney only weighing $4\frac{1}{2}$ or 5 ounces.

17th.—Mother doing well; has had a very good night. 21st.—Improving very satisfactorily.

Dr Alexander R. Simpson regarded Dr Key's case as one of great interest, and doubted whether any similar case were on record where labour had been delayed in consequence of a simple hypertrophy of the foetal kidneys. Enlargement of the kidneys, from obstructions in the tubuli, and the development of multitudes of variously sized cysts in the substance of the kidneys, had sometimes been met with, occurring to such an extent as to impede the passage of the child through the maternal canals; but the preparation sent by Dr Key shewed no trace of cystic degeneration,—the enlargement of the kidney was homogeneous, and depended on the presence of an excessive amount of inter-tubular substance, which gave to the whole organ an unusually soft and succulent appearance. He thought the case further interesting as showing how, in the normal pelvis, the body passing, however deformed, makes the turn as it traverses the floor of the pelvis.

Dr Keiller said, that in delaying any kind of operation, Dr Key had only acted according to the well-established rule in obstetrics, of abstaining from all kinds of artificial interference, so long as labour continued to progress under the natural efforts of the uterus. Dr Keiller shewed a drawing of an infant who had been the subject of cystic degeneration of the kidneys.

Dr George W. Balfour stated that, when in Vienna, *Dr Hyrtl* had shewn him several specimens of hypertrophy of the kidney in the adult; but in the fœtus he believed such a condition must be extremely rare.

Dr Wm. Young believed that obstruction to labour from any kind of enlargement of the kidneys must be very uncommon; for in the whole course of his practice he had never met with a case, although he had seen several, where labour was rendered tedious from the great size of the fœtal liver. He had lately had such a case, where the child presented by the breech, and where considerable tractile force was required to drag it through the maternal passages. The child died a few minutes after it was born; and on opening the abdomen, the liver, which was unusually large, was found to have ruptured, although little or no blood had escaped into the abdominal cavity.

Dr Keiller remarked that a fœtus had once been exhibited to the Society, which had been the subject of intra-uterine peritonitis, so that the abdominal cavity had become so much distended with fluid as to form a considerable obstruction to the progress of labour.

Dr McCowan, referring to the absence of hæmorrhage in *Dr Young's* case of rupture of the liver, stated that he had examined the body of a new-born infant which had been thrown from a height, and received such injuries that it died in about an hour and a half. Amongst other lesions, it was found to have sustained a rupture of the liver, but, although it had continued to live for some time, no blood had been extravasated.

Dr James Siday and other fellows spoke of parallel cases.

II. HÆMORRHAGE AT THE COMMENCEMENT OF LABOUR FROM HYPERTROPHY AND EVERSION OF THE OS UTERI.

Dr Myrtle read the following notes:—On the 11th of December last, I was suddenly called to see a lady about the end of the eighth month of her third pregnancy. The two former labours had been natural and very easy.

On my arrival at 6 P.M. I found there had already been hæmorrhage to a very considerable extent, of a fluid and arterial complexion. There was unwonted depression of spirits, and no small debility; and the labour pains were, and had been trifling, and infrequent. On examination I found the os rigid and dilated transversely; the membranes thick and very tough; and a spongy, villous mass, about two inches in length, and about an inch in thickness, protruding in the transverse diameter of the pelvis. For a time I could not satisfy myself as to the nature of the projecting mass,—now regarding it as a portion of the placenta; then, as malignant disease of the anterior lip of the os uteri. For fear of injuring the tender mass, I could not well get my finger between it and the membranes; and, then, what inclined me to believe it to be a case of placenta prævia as much as anything, it was anteriorly and firmly girt with a well-defined tight band, having the appearance of the unyielding os, in continuity with the posterior lip, and more than half an inch higher than the adjoining protruding mass, and an inch and quarter higher than the posterior portion of the tumour.

I waited an hour or more watching matters carefully; and as the hæmorrhage had rather abated, and the pains continued few and ineffective, I determined on giving two large doses of ergot of rye combined with chloroform, which I had often found very effectual in reviving from depression, and restoring the normal strength of the labour pains. The doses were administered with the interval of a quarter of an hour; and ten minutes after the second, the labour pains became frequent, regular, and strong. The membranes were soon protruded, which I thought advisable to rupture as soon as possible. Shortly after the rupture of the membranes I felt satisfied that the projecting mass was not the placenta, and carefully supporting the anterior lip, I had the satisfaction of finding the os dilating rapidly, the tumour gradually diminishing, while, at the same time, the hæmorrhage continued moderate, and an hour after the first dose of the ergot the child was expelled;—everything else went well, save that a great amount of blood was lost throughout compared with the previous

labours. Notwithstanding this, I felt anxious for a good many days as to what might be the real condition of the os, though there appeared no constitutional or local symptoms beyond the extra discharge, and its prolonged duration; but my fears were happily unfounded, as the patient recovered well, and continues in the best of health, having neither uneasiness nor discharge.

This case brought to my remembrance one I attended years ago, which, up to a certain point, had some strong points of resemblance, but which turned out to be malignant disease of the anterior lip of the os, in which the strength sunk, the labour pains entirely failed, and the long forceps had to be resorted to, and in a few days a fatal termination was the result. In both, the tumours occupied the same position, were of much the same size,—the strength gave way, pains failed, and the discharge was of much the same complexion and extent; in both, the previous labours were natural and easy.

On mentioning the case shortly afterwards to my friend Professor Simpson, he told me he knew of a gentleman who had met with one somewhat similar, and, regarding it as a case of placenta prævia, had absolutely torn away the anterior lip of the os uteri. When looking at the case I have endeavoured to lay before you very briefly, there is scarcely room for so much surprise as one might expect at such a diagnosis being come to; as until the pains became strong, the membranes protruded, and the child's head, together with the careful support afforded to the anterior margin of the os, caused the dilatation and attenuation of the spongy bleeding mass, I remained in uncertainty as to its being the placenta; and it was not until recovery appeared complete, that I could disabuse my mind of the idea of its being organic, perhaps malignant disease. There being no appearance of any tendency to varicose veins, I have arrived at the conclusion that it was a case of simple hypertrophy, which, on its development not being accompanied with a corresponding expansion of the external vaginal coat of the os, had caused the tightness and eversion of the inner portion of the anterior lip. Had the case gone to the full time, the progress of the case, and the result might have been far from favourable.

Delays are often dangerous in our profession as in other things; but when no pressing urgency appears, it is often wise and safe to delay until we see what the "*vis medicatrix naturæ*" can do, whilst we watch and guide her operations to the best of our ability. This case impressed very forcibly on my mind the need of patience when any doubt arises, as the consequences might have been very serious if not fatal, had I given way to my first impression, and which the *prima facie* view of the case well-countenanced, together with the hæmorrhage so much resembling that in placenta prævia.

Drs Cochrane and Wm. Young made some observations as to the action of ergot of rye on the uterus; and it was agreed to have a discussion on that subject at the next meeting of the Society, the discussion to be opened by the president.

III. CALCULUS IN THE CAVITY OF THE CERVIX UTERI.

The *Secretary* showed a preparation of a calculus removed during labour from the cavity of the cervix uteri, and kindly sent for exhibition before the Society by Dr J. G. Wilson of Glasgow, along with the following history of the case:—

The calculus was extracted from the os uteri of a pluriparous patient while in labour. She was attended by a midwife, by whom I was asked to visit her. She had been upwards of six hours in labour when I saw her; the pains were strong and recurring regularly, and the liquor amnii had been draining away for several hours.

"On visiting her I found the os uteri morbidly rigid and unyielding, and dilated only to such an extent as to admit the tip of the examining finger. The os uteri and the upper portion of the vagina were highly indurated, indeed they felt almost cartilaginous. Within the os uteri, in the canal of the cervix, a hard, sharp body was felt, slightly mobile, and evidently not of large size. I was quite at a loss to determine the nature and character of this body or diagnose the presentation. After a very minute and careful examination I was

at length satisfied as to the propriety of its removal. With a pair of ordinary dressing forceps I removed this body, which is the calculus in your possession. The head of the child was now found to present. The presence of the calculus, with the morbid rigidity of the os uteri, had intercepted the labour, and as the pains were strong and regular, I made three or four slight incisions or scarifications into the os uteri; this was with difficulty accomplished, in consequence of the almost cartilaginous induration of the part. In four hours after making the incisions, I found the os uteri dilated to about the size of a shilling, although the pains continued strong and most regular. I would have tried Dr Keiller's method of dilatation had the proper instrument or appliance been at hand. I saw the patient again in about three hours, and found the os uteri much in the same state. I now enlarged or extended the incisions previously made. The os uteri afterwards dilated with comparative rapidity, and in four hours longer I delivered with the forceps, the child being of full size and alive. The mother made an excellent recovery. I learned on inquiry that this woman had laboured under incontinence of urine for four years. There was no trace of a vesico-vaginal or urethro-vaginal fistula; but I strongly suspected the existence of a vesico-uterine one. The urine in all probability escaped (in some measure at least) through the os uteri; and, in my opinion, the calculus was the result, as also the morbid induration of the tissues about the os and upper portion of the vagina.

"About two years ago I saw, with Dr James Dick of this city, a case in some respects similar, a small calculus being detected at the os uteri, which was removed without difficulty. This patient had likewise great inability to retain urine. The calculus presented before the head of the child, and the os uteri and adjacent tissues were in a most indurated state. With the concurrence of Dr Dick, I made a few incisions through the os uteri. The patient was in a highly exhausted state before either Dr Dick or I saw her. As the patient was becoming increasingly feeble, and the pains weaker and weaker, with the consent of Dr Dick, I turned and delivered the child. This woman died. No satisfactory inspection was obtained."

Dr Keiller thought the Society were much indebted to Dr Wilson for his interesting communication, and believed that there were no similar cases on record. He thought that Dr Wilson's conjecture as to there having at one time been a vesico-uterine fistula, was very probably correct. The only case at all approaching in its nature to those described, was that of a patient whom he (Dr K.) had under his care about twenty years ago, and whom he knew to be suffering from a urinary fistula, because the water was all escaping through the vagina. He had several times failed, however, in discovering the vesico-vaginal fistula, until on turning the orifice of the speculum backwards, he found the opening behind the cervix uteri, so that the fistula must have pursued a very sinuous course. Beside the vaginal orifice was a small calculus, which was easily removed.

REPORT OF THE TRIAL OF MARY STRUTH FOR POISONING WITH OXALIC ACID, WITH REMARKS.

By HUGH COWAN, Advocate.

THE case of Mary Struth, tried in the High Court of Justiciary on 2d June 1862 for the administration of oxalic acid or other poison to her father, presents features of considerable interest. So far as the charge of murder is concerned, every one will, we think, agree with the verdict of "Not Proven," which the jury returned. In the state of the evidence as laid before them it would not have been safe to have convicted the prisoner of that charge; but a calm review of the evidence, a summary of which is annexed, convinces us that the statutory charge of administration with intent to destroy life or inflict grievous bodily harm was proved in regard both to the sugar of lead on 29th December, and the salt of sorrel on 11th January.

The case is remarkable as the only one on record in which a charge of chronic

poisoning with oxalic acid has been made. In such a case it was of peculiar importance that possession of the poison should have been traced to the prisoner prior to the alleged administration, but she was not proved to have been in possession of any salt of sorrel till 11th January, although the charge was that the poisoning had begun on 5th December. The serious nature of this defect in the evidence becomes apparent when the symptoms proved to have occurred in Struth's case all through December are compared with the medical evidence as to the symptoms to be expected from poisoning by oxalic acid. And here the first thing which strikes one is, that the deceased invariably became sick *an hour* after the prisoner gave him medicine. The time stated by the medical witnesses as that in which vomiting might be expected to occur after administration of salt of sorrel, was a quarter of an hour or twenty minutes, although they added this would vary with the amount given and with the amount of dilution. Now, there is so much of variety in the action of oxalic acid in this particular, varying from a few minutes up to several hours, and supposed to vary with the constitution of the individual, that if salt of sorrel had been traced into possession of the prisoner prior to these sicknesses, the circumstance of the sickness always occurring after the lapse of an hour would not have been inconsistent with this being the cause of it. Again, as the deceased was not attended by any doctor, the evidence as to the symptoms was necessarily imperfect. At the same time, in now looking back upon that evidence, it appears to me, that while it would have been unsafe for a jury to convict of the continuous administration of this poison in the course of December, there is enough to satisfy one acquainted with the diagnosis of oxalic acid poisoning, of that substance having been administered in small quantities all through December. The vomiting which occurred so regularly—the irritation of the mouth and fauces signified by the expression which deceased used, of boiling lead in his throat—the utter prostration which followed the administration of the medicine, and the pains of which he complained so constantly in his breast and belly—all these, conjoined with the post-mortem appearances, point to this acid as being the cause of deceased's illness.

The other point deserving of especial notice in this case is the length of time which elapsed after the last alleged act of poisoning before the deceased died. The last occasion was the afternoon of 11th January, and the deceased died on the 26th—there being thus an interval of fifteen days. The prisoner was proved to have given medicine to the deceased early that morning,—to have offered a cup with half an ounce of salt of sorrel in water in it to him late in the day, and to have subsequently given him more medicine in the afternoon. On both occasions when she gave him medicine that day he was sick as before. But these were the last occasions on which her hand gave him anything. He was removed to another house and was under medical treatment down to his death. On that afternoon magnesia was given him as an antidote, and afterwards nourishing food. For the first week he rallied, and then he gradually sank till he died. The difficulty which arises here is this, that with one exception there is no recorded case of death after so long a time. The cases of poisoning by oxalic acid, being almost all cases of suicide or accident in which a considerable quantity was taken, have in general been quick cases—varying from *three minutes* up to a few hours. But it is to be observed that a case of chronic poisoning stands in a different position. There the quantity given at each time is very small, and gradually it works on the system. Farther, in Struth's case the proper antidote was administered on the last occasion and thus life was prolonged. The present case bears a remarkable analogy to the case reported by Mr Fraser¹ in this particular. In that case half an ounce had been taken by mistake. The proper antidote was at once applied. The patient rallied at first—indeed, to such an extent, that on the sixth day he drove out in a gig—but subsequently he began to sink, and on the thirteenth² day he died from irritation consequent to the swallowing poison, the effects of which he was generally believed to have overcome. The post-mortem appearances were very similar to those in Struth's case. "The internal surface of the stomach and a small portion of the intestines showed marks of inflammation. The contents were a dark-coloured fluid—the villous coat was completely destroyed—this abrasion extended upwards through the whole of the œsophagus, exposing the muscular coat. The muscular coat both in stomach and œsophagus was much thickened—highly injected, and exhibited a dark gangrenous appearance." On the whole evidence, and on a comparison of the features of this case with other cases of

¹ Edinburgh Medical Journal, vol. xiv. p. 607.

² Dr Taylor says the twenty-third day. This mistake arises from a misprint in the report of the case of 6th October for 16th. The patient swallowed the poison on 16th and died on 29th October 1817.

poisoning by oxalic acid, it seems clear that while it would not have been safe for the jury on the evidence before them, to convict the prisoner of murder, the conclusion at which science must arrive is, that the death of the deceased was caused by the administration of oxalic acid or salt of sorrel.

The prisoner, Mary Struth, was placed at the bar, charged with the crime of murder, or otherwise with the crime at common law of wickedly and feloniously administering to, or causing to be administered to, or taken by any of the lieges, salt of sorrel, sugar of lead, laudanum, or other poison, or any other noxious and destructive substance or thing, whereby they are put in danger of their lives, or are injuriously affected in their health or persons. And under sect. 2 of stat. 10 Geo. IV., c. 38, with the crime of wilfully, maliciously, and unlawfully administering to, or causing to be administered to, or taken by any of his Majesty's subjects, any deadly poison, or other noxious and destructive substance or thing, with intent thereby, or by means thereof, to murder or disable such his Majesty's subject or subjects, or with intent to do some grievous bodily harm to such his Majesty's subject or subjects. The crime was alleged to have been committed by the administration to her father, the deceased John Struth, on various occasions, commencing with the 5th December 1861, and ending with the 11th January 1862, of salt of sorrel, sugar of lead, laudanum, or some other poison, or some noxious and destructive substance or thing. Three occasions were specified,—viz., 5th or 6th December 1861, 29th December 1861, and 11th January 1862,—on the first and last of which salt of sorrel was alleged to have been administered; and on the second of which sugar of lead was alleged to have been administered.

The prisoner pleaded not guilty.

For the Crown, the Solicitor-General (Maitland) and Mr W. Ivory, A.D.; for the prisoner, Messrs W. A. Brown and J. B. Balfour.

The following is a summary of the general evidence in the case:—

The deceased, a frail old man of 75, lived in family with his daughter, the prisoner, and her illegitimate son in Kincardine. On 5th December 1861 he was out for a long time, and had remained for some time at the Ferry Pier, half a mile from his house. That night on his return home he had a hearty supper, and during the night he was taken ill. He ascribed his sickness to a drink of dirty water which his daughter had given him, and said that the drink was salt.¹ From that time forward the deceased was confined to his bed, and the prisoner was constantly giving him medicine quite openly.¹ He was never more than three nights without getting medicine, and always an hour after he got it he became sick.² The sickness was accompanied with great weakness.² Frequently in the course of that month he was found "very low, unable to speak, complaining of a sore breast, sometimes of pain in the belly," and spoke of boiling lead in his throat.³ Such expressions were regarded as the ravings of an old man. On 28th December the prisoner got a girl to buy for her a pennyworth of sugar of lead.⁴ The next morning she gave deceased a drink out of a jug, saying that it was easier than the last, and in rather more than an hour he was taken sick.⁵ A portion of this was laid aside, and on subsequent analysis it was found to be a weak solution of sugar of lead in porter.⁶ On 11th January 1862 the prisoner gave the medicine about 7 in the morning, and he was taken sick about an hour after.⁷ In the afternoon of that day the prisoner went out for more medicine,⁸ and purchased a pennyworth of salt of sorrel.⁹ On her return she put the whole quantity into a cup, and mixed it with water. She then handed it to the deceased, saying it would do him good, but he refused it, on which she placed the cup on the drawers' head.¹⁰ Some time afterwards she again handed him some medicine, which he refused, saying, "For God's sake, to let him die in peace." The medicine was, however, still pressed upon him, the prisoner adding that Mr Steele (the Inspector of Poor) had gone to the doctor's for it himself.¹¹ Suspicion was roused by this, and the inspector having been sent for, came down to the house. The deceased was then taken ill, and vomited. He was so badly that Steele sent the prisoner for Dr Crawford. In her absence he found on the drawers' head the cup laid aside by the prisoner. On her return he asked her what was in the cup, to

¹ Elizabeth Maxwell and Mrs Shand.

⁴ Elizabeth Maxwell and Jane Drysdale

⁵ Elizabeth Maxwell, Mrs Wm. Shand, Steele, Peter Stewart, and Dr MacLagan.

⁷ Mrs Shand.

⁸ Elizabeth Maxwell.

¹⁰ Elizabeth Maxwell.

² Mrs Shand.

³ Mrs Alnslie.

⁵ Elizabeth Maxwell and Mrs Shand.

⁹ John Philip.

¹¹ Mrs Shand.

which she replied cream of tartar.¹ Dr Crawford tasted it, and said "No, it was salt." On this she took the cup from the inspector's hand, and flung the contents on the floor. Desired to get a spoon and lift it, she scattered it rather; on which the inspector put her aside, and gathered up as much as he could. The prisoner then said, "Do you think I would poison my father? it's salt of sorrel, and I have it for cleaning the clothes."¹ The deceased was then put under care of one of the neighbours, magnesia being administered as an antidote to the salt of sorrel; and two days afterwards he was removed at his own request to another house.² After his removal there he ceased to be sick at all; he was treated with a nourishing diet; for the first week he rallied, but after that he gradually sank, till he died on 26th January,—15 days after the last dose of salt of sorrel was alleged to have been administered. The prisoner was apprehended on 16th January. That afternoon she came to a neighbour's house and said, "I hope, Mrs Shand, that you won't say anything against me." "I asked, what she thought it was in my power to say against her. She made no answer. I said I was afraid she had been doing what wasn't right to her father. She made no answer, but seemed sad. I said, if it was the truth she might be thankful it was checked in time."³ The prisoner, in her declaration, denied generally the crimes charged, but admitted that she had bought a pennyworth of salt of sorrel at Dr Crawford's on the morning of 11th January. She stated that the medicine which she had been giving her father during December was cream of tartar mixed with saltpetre, and that she had often sent a little girl named Jessie M'Intosh to buy it for her. This last statement was contradicted by the evidence of the little girl. The only other evidence was that of the secretary and treasurer of the Kilbagie Death Fund Society, who proved that the deceased was a contributor to its funds; that £6 was payable on his death, and that as the prisoner was in the habit of paying the subscription for him, in all probability the sum would be paid to her. But it was stated that the parochial board and the prisoner's brother had both laid claim to it, and therefore it was doubtful to whom it would be paid.

The following is a report, *in extenso*, of the medical evidence:—

James Crawford, Surgeon, Kincardine.—On the 11th of January last I was sent for to see the deceased. When I saw him he was complaining very much—was in a frail shaky state—in a sort of lethargy. I had some difficulty in rousing him by shaking him. He was in a wandering condition—spoke about ships, etc. His pulse was full and throbbing. I saw Mr Steele have a cup in his hand; it contained a white powder mixed with water. The prisoner said it was cream of tartar. I tasted it, and said it wasn't. She plucked it out of Steele's hand, and dashed it on the floor. Steele told her to gather it up. She got a spoon, but scattered it about; so Steele put her aside and gathered it up himself. Prisoner then said it was salt of sorrel which she had purchased that morning. Salt of sorrel is a poison. Its poisonous quality is due to the presence of oxalic acid. That is an irritant poison. The pains in the belly might arise from such a cause. Drowsiness was not likely to be caused by it. I was told he had been vomiting. Vomiting is likely to be produced by such a dose. In five or ten minutes after I would expect the vomiting to occur; but that would depend on the quantity given. I do not remember to have sold salt of sorrel at any time to the prisoner, nor sugar of lead. I know a girl named Jane Drysdale. I do not remember to have sold her any sugar of lead shortly before this. A dose of cream of tartar and saltpetre would not have produced the symptoms I saw. Such a dose would not produce vomiting, unless it was a very large dose, a dose of ounces. I prescribed magnesia. I had heard he had been getting salt of sorrel, and I prescribed the magnesia to counteract it. Deceased was removed on Monday the 13th to Mrs Strang's. He died on the 26th. I attended him down to his death. He did not vomit at all after his removal. I prescribed a nourishing diet after this. Deceased complained occasionally of thirst. For some time I thought he was going to get better. He rallied for the first week, but in the second week he gradually sank till he died. I made a *post-mortem* examination with Drs Forrest and Brotherton. The report was read by Dr Forrest, and was as follows:—

Kincardine, 28th January 1862.—We this day, by virtue of a warrant from the Sheriff of Perthshire, opened and carefully examined the body of John Struth, an old man, seventy-five years of age, reported to us as having died on Sunday last, 26th inst. The body was very much emaciated, very rigid, and quite free from putrefaction. There was a recent abrasion of the cuticle on the outer side of the right knee. There were also two abrasions of the cuticle on the outer side of the left knee, and

¹ Elizabeth Maxwell, Mr Steele, Mrs Drysdale, and Dr Crawford.

² Mr Steele, Mrs Drysdale, Mrs Strang, etc.

³ Evidence of Mrs Shand.

two abrasions of the cuticle on the outer side of the left arm a little below the elbow. All these abrasions, with the exception of the recent abrasion on the outer side of the right knee, were cicatrized. There was a bed sore on the outer side of the left hip, a little behind. There were no other marks of external injury.

The stomach contained seven and a half ounces of a watery fluid of a yellow colour, having a large quantity of mucus suspended in it. The rugæ of the stomach, especially at its lesser curvature, were very large and remarkably developed. There was a very large deposit of mucus all over the smaller curvature, adhering to the mucous coat of the stomach. The mucous coat all over the larger curvature had a mottled and somewhat straited appearance, and was a good deal congested. The mucous coat of the intestines throughout their whole course was very much congested, and a large portion of the ileum was in a state of approaching sphacelus or mortification, the peritoneal coat of the intestine there being of a very dark colour and easily torn. The rugæ of the smaller intestines, like those of the stomach, were remarkably developed; and throughout the whole course of the intestines, the mucous coat was remarkably loaded with mucus. The liver was healthy, but pale and soft; it contained very little blood. The gall bladder contained no bile, but was quite filled with calculi, twenty-one in number, of a large size and angular. The pancreas, spleen, and kidneys were healthy. The urinary bladder was empty. The mouth, œsophagus, and pharynx were healthy and free from mucus. There was a rupture on the left side which had been reduced so as to admit of the use of a truss. The lungs were quite healthy, and collapsed completely on exposure. The larynx, trachea, and bronchi were quite healthy. The heart was very much enlarged by dilatation of the right cavities and hypertrophy of the left. The wall of the left ventricle was more than an inch in thickness. The valves were healthy. There was a fibrinous deposit in both ventricles. The large vessels contained very little blood. There was no effusion into the pericardium.

The dura mater was very much thickened and very opaque, and the anterior part of its falsiform process was quite ossified. The arachnoid was also thickened and opaque, and there was a great deal of effusion under it. This serum had collected in the anterior lobe of the right hemisphere of the brain, and evidently by its pressure had formed a circular cavity of the size of a small walnut, the substance of the brain being absorbed here to this extent. There was a great deal of serum in the ventricles and base of the cranium. The spine was quite healthy.

The following were saved for chemical examination should this be deemed necessary. 1. The stomach and its contents. 2. The intestines large and small. 3. A portion of the liver. 4. Both kidneys. 5. The spleen.

These we certify on soul and conscience. (Signed) WILLIAM H. FORREST, Surgeon.

JAMES CRAWFORD, Surgeon.

PETER BROTHERSTON, Surgeon.

That is a true report. In my attendance on him, Struth referred to his daughter. He said he didn't wish to take anything that she gave him, for she had given him something that had done him harm. From the appearance of the body, I concluded that he had got something that caused inflammation of the bowels; but whether that caused death I cannot say. Death took place in fifteen days after I was called in. The bowels and stomach were both inflamed. There was very extensive inflammation. I am of opinion that the deceased had got an irritant substance which caused the inflammation of stomach and bowels. I have made *post-mortem* examinations of persons who have died of inflammation of the stomach, and also of persons who had died of inflammation of the bowels, but never of persons who had died of inflammation of both.

Cross-examined by Mr Brown.—I may have sold sugar of lead without marking it as poison. I had not attended Struth for many months before the 11th of January. I knew that about a year before that he had a fall down the hold of a ship. He had a rupture and wore a truss. Salt of sorrel contains a very large proportion of oxalic acid. It is difficult, I should say, to distinguish the symptoms of poisoning by oxalic acid from those of natural disease. I once attended a woman who was poisoned by oxalic acid. She vomited very much. I gave her hot water to increase the vomiting, and she recovered in three days. I would expect, in a case of poisoning by oxalic acid, constriction of the throat and burning of the mouth, if the dose was large, also irritation of the mouth, œsophagus, and fauces, if the dose was large. I rather think that the poisonous qualities of salt of sorrel are generally known. I happen to know that they are generally known in Kincardine where I reside. It is often used for removing stains from linen. It resembles saltpetre in the ground state, and also

cream of tartar, but it does not resemble Epsom salts. While at Mrs Strang's, deceased showed only general debility. Repeated doses of cream of tartar and saltpetre would not have produced the *post-mortem* appearances. Being referred to *Christison on Poisons*, 4th edition, p. 241. There is a good deal of resemblance between the symptoms in the cases referred to there, and those noticed in our report. But a great deal depends on the quantity. Saltpetre has often caused fatal accidents by being mistaken for other substances such as Glauber's salts. Struth was an old man and frail. I thought he might have recovered. I reduced the rupture last on the 11th of January. I took off the truss on 12th January. I did not think that that was the cause of the pain of which he complained. Interrogated—Might the inflammation of the bowels not have been caused by the rupture and the pressure of the truss? It was not a rupture of the bowels at all, it was a rupture of the omentum. Interrogated—Might the pain have been produced by the presence of indigestible food in the stomach? Yes. I am not aware that softening of the stomach is characteristic of poisoning by oxalic acid.

William Hutton Forrest, surgeon, Stirling.—By desire of the procurator-fiscal at Dunblane, I went to Kincardine on the 21st of January last, and saw Struth in life. I prepared a medical report. The report was as follows:—

Stirling, 24th January 1862.—I hereby certify that I visited and carefully examined on the 21st inst., by desire of Thomas Barty, Esq., John Struth, residing in Easter Kincardine. I found him an old man, seventy-five years of age, weak, very deaf, and confined to bed. He appeared to be free from disease, and from the action of any poisonous substance on his system. He answered rationally and distinctly any question put to him as soon as his deafness enabled him to comprehend it. He complained in very strong terms of having received on various occasions some injurious substance from his daughter, and stated that always after receiving it he was attacked by some pain in the stomach, sickness, vomiting, drowsiness, and great weakness. I also carefully examined a cup shown me, and found in it a considerable sediment, said to be salt of sorrel, a poisonous substance in general use for removing stains from linen. I tasted this substance and considered it to be either salt of sorrel (the quadroxalate or binoxalate of potash) or oxalic acid. I am of opinion that the symptoms described to me by John Struth are consistent with the well-known action of either of the above poisonous substances on the human system. This I certify on soul and conscience.

(Signed) WILLIAM H. FORREST, Surgeon.

That is a true report. After the death of Struth, I made a *post-mortem* examination along with Dr Brotherston and Dr Crawford. The report now shown is a true report. Supposing Struth to have got a dose of salt of sorrel on 11th January, would you expect to have found it in his system after his death on the 26th? I would not. At what conclusion did you arrive as to the cause of Struth's death? It was some time before I made up my mind altogether. I had no hesitation in coming to the conclusion that death was produced by inflammation of the mucous coat of the stomach and bowels; but I took time to consider how that inflammation was induced. There was disease of the heart and also of the brain, but neither of these in my opinion was the cause of death. I ultimately came to the conclusion that the inflammation was induced by the application of an irritant poison. I rest this opinion on the facts,—(1.) That an irritant had been administered to Struth, as stated by himself to me; (2.) That I never in the course of my practice, which has been pretty extensive, met with such a state of inflammation of the whole mucous membranes both of the stomach and intestines, except when induced by an irritant poison. The appearance of the body, apart from the statement made to me by Struth, would have led me to suspect poisoning; and this was confirmed by his statement. Supposing salt of sorrel to have been administered, magnesia or lime would be the proper antidotes. The symptoms I would expect to follow the administration of the poison are—severe pain in the stomach almost immediately after its administration, sickness, vomiting, probably fainting, certainly prostration. Drowsiness would be characteristic, but is not always present. There would very likely be thirst after a time. In common language, when people speak of a pain in the breast, they mean pain in the stomach, and when they speak of pain in the belly, they mean pain in the bowels. Pain in the bowels is a characteristic symptom of poisoning by oxalic acid. The time that elapsed before the symptoms supervened would depend on the quantity administered, and the extent to which it was diluted. If very much diluted it would cease to be an irritant, but it would still be a poison. It acts on the brain and also on the heart, destroying or weakening its contractility. I would not necessarily expect inflammation of the mouth and throat. If it did cause such, I cannot say if it would be away

by the 21st of January, when I saw deceased. There was no inflammation of the mouth then. This does not affect my opinion. The swelling of the face seems to have been very slight and transient. It might have been the effect of the vomiting. As to a fatal dose, there is one case of death after half an ounce. Struth complained of no active disease when I saw him on 21st January. He complained only of hunger and thirst, and I thought him convalescent and likely to recover. A dose of cream of tartar and saltpetre might produce the effects I saw, if taken in a very large dose—quite an unusual dose.

Cross-examined.—I have heard of a chronic case of poisoning by oxalic acid. In the case of a frail man, seventy-five years of age, stated to have received the poison on one occasion, who on the night immediately preceding that occasion had been in a dying state, and who died fifteen days afterwards, showing on *post-mortem* examination no trace of the poison, chemical or pathological, I would have great difficulty in ascribing the death to the poison; and, indeed, I could not consider such a case as a case of irritant poisoning at all.

Dr Douglas MacLagan, Edinburgh.—Shown a medical report dated 12th March 1862. That is the report of the chemical analysis I made of the contents of the stomach and other intestines of the deceased John Struth. The report is as follows:

Edinburgh, 12th March 1862.—On the 23d of January I received from the hands of Peter Stewart, Inspector of Police, Dunblane, the following articles for analysis in reference to the case of Mary Struth,—1st, A teacup duly secured in brown paper, having a sealed label attached, No. 1. 2d, A white medicine phial, with what appeared to be a few drops of water in it, No. 2. 3d, A cut crystal cruet bottle containing a brown fluid, No. 3. On 29th January I received from Inspector Stewart the following articles: 4th, A quart bottle; 5th, A soda-water bottle, containing contents of John Struth's stomach; 6th, A stone jar, containing (1) the stomach; (2) the intestines, large and small; (3) a portion of the liver; (4) both kidneys; (5) the spleen.

All these articles were duly secured and labelled. The following are the results of my examination and analysis:—No. 1, Cup,—This was found to contain a white-looking matter in a solid mass, which, when broken up, was seen to be a crystalline salt of some kind which had been moistened with water. A small quantity of dirty brown and black particles were found mixed with it. The total weight, as taken from the cup, was 81 grains. By drying on the vapour bath it lost 5 grains of moisture, so that the total solid matter was 76 grains. The whole was dissolved in boiling distilled water and filtered. Some black matter and particles of sand weighing 1½ grains were thus separated. The filtered fluid, on cooling rapidly, deposited white crystals, which, when collected and dried, were found to have the following properties:—They dissolved in water forming an acid solution. This solution gave, with sulphate of lime, a white precipitate, insoluble in acetic acid, but soluble in hydrochloric acid; with nitrate of silver it gave a copious white precipitate, which, when collected, washed, and dried, exploded, and was dissipated on heating it on platinum foil. A portion of the crystals heated on a platinum capsule, with sulphuric acid, gave off inflammable gas without blackening, and left a white residue. Another portion of the crystals, when burned in a platinum crucible, left a greyish-white alkaline ash, which effervesced with hydrochloric acid, and formed a solution which precipitated copiously with bichloride of platinum. These reactions established the fact that this saline matter was what is known in commerce as salt of sorrel, and which is chemically called superoxalate of potash. There are two salts, both of which have been sold as salt of sorrel, the one containing two the other four proportions of oxalic acid to one of potash. By a quantitative analysis it was found that the last under examination was the latter of these, the quadroxalate of potash, and which, as containing twice the amount of oxalic acid, must be regarded as a more active poison than the other or binoxalate. No. 2, Medicine Phial,—Found to contain only whisky. No. 3, Cruet Bottle,—This contained 1½ ounce of a brown turbid liquor which speedily let fall a heavy brown deposit, leaving the clear fluid of a pale sherry colour. It had the smell of sour beer or porter. It had a sour, but feebly sweet taste. Its reaction was strongly acid. The clear fluid was precipitated yellow by iodide of potassium, white by sulphuric acid, and brown-black by sulphuretted hydrogen. A portion of the deposit I placed under the microscope showed a quantity of the minute vegetable body known scientifically as *Torula cerevisie*, or yeast plant, which occurs in malt liquors and other fermented fluids. These characters sufficiently showed that the brown fluid in this bottle was porter which had been mixed with sugar of lead. The quantity of sugar of lead in the contents of this bottle was

small. About a third of the whole had been used in the above experiments. The remainder was subjected to a quantitative analysis, and the amount of lead which it yielded corresponded to one grain of sugar of lead. No. 4, A Bottle,—Found to contain only oatmeal and water. No. 5, Soda-water Bottle (containing the contents of deceased's stomach),—After enumerating the experiments made, Dr MacLagan says, "I found no poison whatever in the contents of the stomach." No. 6, Jar (containing *ut supra*),—The stomach, which had been opened, was free from inflammation externally. There was about an ounce of tenacious pinkish-grey mucus lining its interior. The mucous membrane was rugose throughout its whole extent, and was throughout more or less inflamed, presenting the appearance of having been highly congested, with numerous black punctiform patches of extravasation into the submucous tissue. Its colour was a deep red inclining to brown, which was probably due to putrefactive changes. The intestines were more or less inflamed throughout. The redness was more especially conspicuous in the upper part of the ileum, or lower portion of the small intestine. The colon or large intestine appears to have been the seat of violent inflammation, the mucous membrane at more than one point presenting a black appearance as if it had threatened to mortify. The rectum or lower bowel was not much inflamed, except at its upper part, where it was red, and at one point deeply congested. The impression made on my mind by the appearance of the organs was that the universally inflamed state in which they were found was due, not to natural disease, but to the action of some irritant poison.

The intestines were rinsed in successive portions of distilled water to remove the feculent matter which they contained. (The experiments made are then narrated.) A minute quantity of a brown-black precipitate was formed (with sulphuretted hydrogen), which indicated the presence of a small trace of lead; but the quantity was too small to enable me to make any corroborative experiments. I then examined the liver and spleen for lead, by drying and incinerating the whole of the spleen and a portion of liver weighing 3 oz. In the ash of both organs I found a minute trace of lead, both by the test of sulphuretted hydrogen and of sulphuric acid,—the trace found in the liver being rather larger than that got from the spleen. The trace of lead thus found was not produced from the apparatus or materials, for the incinerations were performed entirely on platinum, and the distilled water used was tested for lead, and found to be free of it. I have to remark, however, that the discovery of a minute trace of lead in the organs and in the contents of the bowels is not a satisfactory proof of its having been administered with criminal intent, because such minute traces of lead may find their way into the body in drinking water, and in various articles of food. Moreover, even had I found more lead than my experiments showed, I would hesitate to ascribe the death of John Struth to sugar of lead, which is only a feeble poison, and not likely to prove fatal unless administered in very large doses.

The evidence of death by poison in this case must rest upon the morbid appearances and history of the symptoms, with which I am at present unacquainted. Of the substances found in the various productions sent to me, the salt of sorrel is the only one to which I would ascribe the death of John Struth; and if the history of the case is consistent with the view that he had symptoms of irritant poison, and died after an illness of some duration, it is quite possible that he may have perished from the effects of the salt of sorrel, which had become eliminated from the body during the fatal illness.

(Signed) ANDREW DOUGLAS MACLAGAN.

That is a true report. The bottles shown me, labels Nos. 7 and 8, both contain the quadroxalate of potash.¹ Salt of sorrel is a soluble salt. I would expect it to be eliminated from the system by the 26th January, if administered before the 11th. If sugar of lead had been administered on 29th December, and the person died on 26th January, I would not expect to find much of it in the system,—there might be a trace of it at that distance of time. In the organs sent me for examination there was extensive inflammation of the mucous membrane. I have never seen such extensive inflammation of the whole alimentary canal except in cases of poisoning. I know of no natural disease that would cause it. Salt of sorrel might produce it. Inflammation appeared to me the cause of death.

Cross-examined by Mr Brown.—My report is not exclusive of Struth's death being caused by some other irritant. Saltpetre is an irritant, and if administered in large quantity would produce inflammation. I would expect to find that there had been a continued administration of the poison, so as to explain the appearances presented by the lower organs. The post-mortem appearances indicated a chronic state of inflam-

¹ These were samples of salt of sorrel sold respectively by Dr Crawford and by a grocer named Philp.

mation. Continuous doses of cream of tartar and saltpetre might produce similar inflammation. Take the case of an old man of 75, who was the night before the alleged administration of the poison in a dying state, who exhibited during the week which followed no symptoms of debility, and in whose body after death—14 days subsequent to the alleged administration of the poison—no trace of poison was found, would you ascribe his death to the poison? I would hesitate to do so. I would expect to find irritation of the fauces if salt of sorrel had been administered in a large dose, but not if diluted. Salt of sorrel has an acid taste; so has cream of tartar. Anybody might mistake the two in powder until they were analyzed. The great majority of cases of poisoning by oxalic acid have been quick cases. Sugar of lead somewhat resembles white sugar. It gets its name from its sweetish taste.

The Solicitor-General for the Crown, and Mr W. A. Brown for the prisoner, having addressed the jury,

The Lord Justice-General, in charging the jury, said that this was undoubtedly a case of great suspicion, but that the jury must consider attentively the evidence laid before them. Having explained the nature of the indictment, he pointed out that there had been no poison traced into the possession of the prisoner prior to 29th December, and that the lead found in the body of deceased was in such small quantity that it might have come there naturally, and that that could not be said to be the cause of death. That no salt of sorrel was traced to the prisoner till the 11th of January, and that it was in evidence that even if they came to the conclusion that salt of sorrel had been administered, as charged, that day, the death of the deceased should have resulted quicker if caused by that dose. That to make out a case of chronic poisoning the Crown should have proved the continuous possession of the poison by the prisoner.

The jury, by a majority, found the charges "Not Proven."

UNIVERSITY OF LONDON—APPLICATION FOR THE ADMISSION OF WOMEN TO DEGREES.

At a recent meeting of the Senate of the University of London, the subject of admitting women to the degrees of the University was raised by the petition of a young lady to be admitted as a candidate for a medical degree. As at present constituted, the University has no power to receive female candidates, and therefore only one answer could be given to that special application. It being in contemplation, however, to procure an amended charter for the University, there was a good opportunity of recommending to the Crown an alteration in this particular point. Accordingly, at a subsequent meeting of Senate, the Vice-Chancellor (Mr George Grote, the historian of Greece) moved a resolution as follows:—"That the Senate will endeavour, as far as their powers reach, to obtain a modification of the charter, rendering female students admissible to the degrees and honours of the University of London, on the same conditions of examinations as male students, but not rendering them admissible to become members of Convocation." There voted with Mr Grote the following members of Senate:—Dr Foster, Chairman of the Convocation; Mr James Heywood, formerly M.P. for North Lancashire; Mr Robert Lowe, M.P., Vice-President of the Privy Council; Mr Paget; Sir Edward Ryan; Dr Roget; Mr Senior, the well-known political economist; Lord Stanley; and Mr Twistleton. The noes were—The Chancellor (Lord Granville); Lord Overstone; Dr Arnott; Dr Billing; Mr Faraday; Dr Gull; Mr Jessel; Mr Kiernan, surgeon; Mr Oslar; Dr Storar;—five out of the ten being medical men. The votes being thus equal, the Chancellor gave his casting vote for the noes, and the motion was accordingly lost.—*Correspondent of the Aberdeen Herald.*

LADY PHYSICIANS.

At a recent meeting of the Royal College of Physicians of Edinburgh, a petition from a lady was presented, in which she requested to be admitted to the preliminary examination previously to being enrolled as a medical student, with a view to obtaining the license of the College. The College decided by a majority that it was inexpedient to grant the request of the petitioner.

THE ROYAL COLLEGE OF SURGEONS AND THE MEDICAL COUNCIL.

At a meeting of the Royal College of Surgeons, held on the 6th June, the following resolutions, moved by Dr Struthers, and seconded by Dr Gairdner, were unanimously adopted:—

1. That the College has learned with surprise that the General Medical Council has declined to express disapproval of the course pursued by the Royal College of Surgeons of England in issuing regulations in regard to preliminary and professional education which are at variance with the recommendations of the General Medical Council. That the College regrets this proceeding on the part of the General Medical Council as unjust to this College, which has hitherto adopted all the recommendations of the General Medical Council, in the faith that the Council would not fail to show a determination to require their adoption by other licensing bodies, and as tending to discourage this College in its efforts to raise the standard of preliminary and professional education.

2. That it be remitted to the President's Council to consider what alterations of the present regulations of the College are demanded in consequence of the position in which the College is placed by the recent proceedings of the General Medical Council, and to report to the College without delay.

THE WOUNDED AT FORT DONELSON AND PITTSBURG LANDING.

WE take the following extracts from an interesting account of the wounded at Fort Donelson and Pittsburg Landing, communicated to the Chicago Medical Journal by one of the surgeons sent to those places by the Western Sanitary Commission:—

"The wounds were of almost every possible variety, and I call up from memory, after the lapse of two weeks, some of those that I saw.

"Two wounds of head by balls, both balls entering brain; one had died and the other would. One struck by passing ball, depressing the skull; I trephined him, but he would probably die. One upper jaw shot out; one lower jaw struck by a ball at symphysis and broken into four pieces, one piece taken out and others very much dislocated by action of muscles. He was a brother of one of our students of 1860-61, who was with him and giving him a brother's care. Erysipelas also broke out in his face; treated with iron locally and iron and quinine internally. In one case a bullet entered the external ear, coming out on the opposite side between the jaws in front of the ramus, cutting the palate severely. In one case a bullet passed between the oesophagus and trachea; in one a bullet entered as the body was stooping, at the lower end of the scapula, coming out on the neck in front, cutting the apex of the lung. Three cases of bullets directly through the lung, all died. Two were of Minié balls—holes very large—and both of them suffered very much. Several wounds of the arm and forearm; one a fracture of the surgical neck by a ball. One ball struck a man lying on his side in the epigastric region, and following between the layers of muscles came out on the back part of the hip. One man was shot directly through the right iliac region, the ball remaining in, and he well enough to be removed home—no seeming trouble. One poor boy shot directly through the sacrum, suffered terribly, paralyzed bladder, though his bowels moved naturally. Had also another wound through the thigh.

"Very many were shot through the lower limbs; three or four through the knee-joint; two through the ankle-joint. Those through the joints, as inflammation arose, suffered intensely. The wounds made by the balls of different kinds were generally easily distinguishable. The modern Minié ball, from its great size and tearing qualities, will most likely largely increase the mortality from wounds, of those not killed immediately. The inflammation in joints arising from such balls must need be destructive.

"The wounded were mostly patient and easily satisfied, and grateful for attentions. They seldom complained, and with few exceptions, and these with every reason, made but little noise.

"One soldier named Medland—31st Illinois, Co. B.—was in the first instance shot through the knee-joint. He did not give up, but still kept firing. Another ball struck and went the whole length of the thigh—a flesh wound; and still he fired till a ball coming shattered his left arm and stopped his handling his gun. This man then lay on the field two and a half days, without food, drink, or shelter, before his wounds were dressed. I had no more resolute man, or more cheerful one, under my care, and he talked happily of the time when he would be well enough to try it again.

"Another almost similar instance of a young man named Broderick, 8th Illinois, first shot through the hips, then arms, and not until a ball broke his gun, and shattered his left hand, did he desist.

"Surgeon Marsh told me that of his two hundred and two wounded and killed, but a single man groaned, and he was shot through the lungs. . . .

"The amputations showed a remarkable atonic tendency. None seemed to take on a vigorous healing character. One fine intellectual-looking German, with an amputated limb, was constantly delirious. There seemed no reason, so far as appearances went, why he should not get well, yet he went slowly down, and was in *articulo mortis* when we left him. One case of a German interested me. He was shot under the lower extremity of the left scapula, and I took out the battered ball between the lower border of the larynx and the right sterno-mastoid muscle, directly in front of the vessels. He had spit blood at first and suffered pain, but now seemed to be doing well, eating every meal. When he was asked if he had ever seen fight before, he turned up his shirt, and his scarred body needed no confirmation.

"We found many wounded on the lower extremities. Some accounted for it by the repeated order of Gen. Beauregard 'to fire low—never to kill when they could cripple—that it required two well men to care for each wounded one, while dead men took care of themselves.'

"The battle of Pittsburg Landing was eminently disastrous. I could calculate from the number of wounded on various boats and in Savannah, nearly six thousand, and how many more are in tents and more slightly wounded, I had no means of ascertaining. There were in Savannah, eight miles below, for the first few days after the fight, twenty-one hundred scattered in twenty different places; all the houses, churches, or places capable of holding them being occupied. These were supplied with seven surgeons. Imagine the services rendered to three hundred freshly wounded men by one worn-out surgeon.

"The surgeons on our boat worked nobly, and their labours accomplished everything anticipated. Our medical students had a rich treat and a surgical feast."—*Boston Medical and Surgical Journal*.

RELATIVE MORTALITY IN FRENCH AND ENGLISH HOSPITALS.

At the recent meeting of the Social Science Association, Mr A. E. Durham read a paper on "The Comparative Hygienic arrangements of the French and English Hospitals." Mr Durham unhesitatingly awarded the palm to his countrymen. Notwithstanding the much larger proportion of slight cases admitted into the French Hospitals, their rate of mortality is, it appears, much higher than in England. In amputations, for instance, the percentage of death is 25·3 in London, and 45·6 in Paris. In special operations the disproportion is far greater, the percentages of deaths in amputation of the thigh for disease being 17·5 in London, and 60 in Paris. The excessive mortality in Paris Mr Durham attributes rather to deficient sanitary arrangements than to any want of surgical skill. The Parisian hospitals are very imposing in outward appearance, but within are over-crowded, ill-ventilated, and filthy beyond description. On the

other hand, the English hospitals which are planted in inferior situations, and are comparatively mean in external aspect, are, as a rule, spacious, clean, and airy. The diet in London is much more liberal and varied than in the French capital, but our cooking is not equally satisfactory. Mr Durham laid great stress upon the importance of consulting the inclination of patients as to their diet, and of rendering it as varied as possible.

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- Bigg,—On the Mechanical Appliances necessary for the Treatment of Deformities. Part II.—The Spine and Upper Extremities. By H. Heather Bigg, Anatomical Mechanist to the Queen, etc. London, 1862.
- Chance,—The Nature, Causes, Variety, and Treatment of Bodily Deformities. Part I. By E. J. Chance, F.R.C.S.E., etc. London, 1862.
- Fleming,—Medical Statistics of Life Assurance: Scottish Amicable Life Ass. Soc. By J. G. Fleming, M.D., etc. Glasgow, 1862.
- Habershon,—On Diseases of the Abdomen. By S. O. Habershon, M.D., etc. Second Edition. London, 1862.
- Harkin,—Registration of Births, Deaths, and Diseases. By Alexander Harkin, M.D., Belfast. London, 1862.
- Heath,—A Manual of Minor Surgery and Bandaging, for the use of House-Surgeons, Dressers, and Junior Practitioners. By Christopher Heath, F.R.C.S., etc. Second Edition. London, 1862.
- Jones,—The Use of Perchloride of Iron and other Chalybeate Salts in Consumption. By James Jones, M.D., etc. London, 1862.
- Lee,—The Medical Profession in Great Britain and Ireland, with an Account of the Medical Organization of France, Italy, Germany, and America. By Edwin Lee, M.D., etc. Parts 1 and 2. London, 1857.
- Meadows,—Manual of Midwifery. By Alfred Meadows, M.D., etc. London, 1862.
- Pavy,—Researches on the Nature and Treatment of Diabetes. By F. W. Pavy, M.D., etc. London, 1862.
- Smith,—Hæmorrhoids and Prolapsus of the Rectum. By Henry Smith, F.R.C.S., etc. Third Edition. London, 1862.
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- Sussex County Lunatic Asylum, Haywards' Heath, Third Annual Report of, 1861.
- Wetzlar,—The Medical Properties of the Aix-la-Chapelle Hot Sulphureous Waters, and the Mode of their Employment. By L. Wetzlar, M.D. Aix-la-Chapelle, 1862.
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- Births, Deaths, and Marriages, Monthly Return of, May 1862.
- Boston Medical and Surgical Journal,—May 1, 8, 15, 22, 29, June 5. 1862.
- British Medical Journal,—May 31, June 7, 14, 21. London, 1862.
- Canstatt's Jahresbericht for 1860,—Part 4, etc. Wurzburg, 1861.
- Dublin Medical Press,—May 28, June 4, 11, 18, 1862.
- Gazette des Hôpitaux, May 24, 27, 29 et 31, June 3, 5, 7, 10, 12, 14, 17, 19, 21. Paris, 1862.
- Gazette Hebdomadaire de Médecine,—May 30, June 6, 13. Paris, 1862.
- Gazette Médicale de Paris,—May 24, 31, June 7, 1862.
- Health, etc., of Manchester,—May 1862.
- Journal de Médecine et de Chirurgie,—June. Paris, 1862.
- Journal für Kinderkrankheiten,—March and April. Erlangen, 1862.
- Medical Times and Gazette,—May 31, June 7, 14, 21. London, 1862.
- Medizinische Jahrbücher,—Part II. Vienna, 1862.
- Revue de Thérapeutique Medico-Chirurgicale,—June 1, 15. Paris, 1862.
- Wochenblatt der Zeitschrift der Aerzte in Wien,—Nos. 16 to 20, for 1862.

Publications and Periodicals for this Journal should be addressed—

To the EDITOR *of* THE MEDICAL JOURNAL,

Care of MESSRS OLIVER & BOYD,

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Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Homicidal Mania : a Biography ; with Physiological and Medico-Legal Comments.* By D. YELLOWLEES, M.D., Assistant-Physician, Royal Edinburgh Asylum.

(Read to the Medico-Chirurgical Society, 4th June 1862.)

I HOPE the subject of my paper, and the biographical sketch with which it is illustrated, will justify me in bringing them before the Society without apology or preface. I shall, therefore, offer none, but proceed at once to give a brief sketch of the most interesting patient I have ever known.

William Smith was for more than twenty years the most remarkable and most dangerous inmate of the Royal Edinburgh Asylum : the story of his life is worth telling for its own sake ; but yet more so for its physiological interest, and for its bearings on some very important and much debated questions in legal medicine.

His long seclusion from the outer world has made it more difficult to ascertain his history than might have been expected from the notoriety he at one time enjoyed. It is fortunate, however, for his would-be biographer that many of Smith's own publications—for, as we shall presently see, he was an extensive and enterprising publisher—contain fragments of his personal history, and a very complete record of the annoyances and persecutions, as he deemed them, which he endured for many years, and which culminated in what he said was the greatest wrong of all, his confinement as a dangerous lunatic in the asylum at Morningside.

Smith was the son of a joiner in Bristo Port, Edinburgh, and was born about the end of last century. He followed his father's occupation, served his apprenticeship in his father's workshop, and in course of time assisted him in carrying on the business.

For some reason or other, young Smith was led to turn his attention to a special department of the trade, and ere long his ingenuity and skill as a workman procured for him some local reputation as a printers' joiner.

From working among printing presses, type cases, and printing frames, Smith conceived the bold idea of becoming a printer himself, and not a printer alone, but author, printer, and publisher too. He had already attempted authorship, and had produced some

doggerel rhymes on various subjects, but you may imagine the difficulties with which he had to contend in carrying out his plan; yet in spite of the delay in making his printing press, in spite of his ignorance of the art of printing, in spite of the expense of types and paper in those days, in spite of his inexperience as an author, and his obscurity as a publisher, the young joiner struggled on unwearied and undaunted; his friend Austin, a wood-engraver, furnished him with illustrations, and at length, about the year 1820—twelve years before the first number of Chambers's Journal—there issued from the humble press at No. 3 Bristo Port, his first illustrated sheet, price one halfpenny—the earliest herald of that wonderful, illustrated cheap literature which educates and blesses our land to-day.

The attractions of literature appear to have increased in the eyes of the young author, and to have induced him to choose a more intellectual occupation, and one which would leave him greater leisure to devote to his literary labours; for we find him after a few years forsaking his bench and commencing a school in the Cross-causeway; he taught “the three R's” and book-keeping, and was for about seven years a laborious and successful teacher. He gave much attention to music also, frequently officiated as precentor in Greyfriars' Church, and published a collection of psalm tunes, with instructions in the theory and practice of psalmody.

During all these years, as well as subsequently, he continued to publish, at short intervals, songs, stories, biographies, humorous extracts from books, notices of eminent men, witty dialogues, and poetry in all kinds of measures, and on all kinds of subjects—forming a large and very miscellaneous collection. Among the most notable of his publications about this period (1829) was “The Life and Death of Daft Jamie” Wilson, the poor imbecile who was the last of Burke's victims, and whose sudden disappearance and subsequent recognition constituted important evidence against the murderer; the sale of this pamphlet was so great and rapid as to require the subsequent publication of a second edition. Smith was much elated by his success as an author, and in one of his brochures it is celebrated in these doggerel lines—

“There's Willie Smith the carpenter
Become at last a publisher;
You'll meet his works in rhyme and prose,
Throughout this land o' cakes and brose.”

But with the success there came also its invariable alloy; for no sooner did Willie begin to realize his hopes of becoming a publisher, than he began to experience the annoyances, the malevolence, and the persecution which followed him, as he believed, throughout the rest of his life.

His grievances seem to have begun in the nickname of “Whisker Willie,” given him very likely by his own scholars, on account of the unusual quantity of hair he wore on the face. He was much

annoyed when this name was shouted after him on the street; and at length summoned before the Police Court a person who had thus provoked him. The magistrate dismissed the case as frivolous, or at least did not decide as Willie had expected, which of course confirmed his belief that he was persecuted, and was the occasion of the first public manifestation of his insanity; for soon afterwards, while the magistrate was officiating as an elder on a sacramental occasion in Greyfriars' Church, Smith stood up in the midst of the congregation and assailed him with reproach and reproof for his partiality, hypocrisy, and unjust judgment.

In consequence of this conduct, a warrant was issued for his apprehension, and he was confined at first in the police cells, and then for ten days in the old "Lock-up" as it was called, which is frequently and emphatically stigmatized in his writings as very remarkable for its filthiness, and for the number and size of the parasites which infested it: while here his insanity was recognised, and he was then sent to the West-Kirk Bedlam. There, notwithstanding all the care of his attendants, he obtained and kept secreted about his person a sharp dagger, made by grinding a triangular file to a point, with which, to quote the words of my informant, who visited him while in the Bedlam, "he was going to revenge himself, but on nobody in particular."

From the Bedlam he was sent to one of the private asylums at Musselburgh. Here he was generally on the whole pretty quiet and contented, never attempted any revengeful act, but made himself agreeable and useful, in order to obtain his discharge. The exact period of his residence at Musselburgh I cannot ascertain, but it was probably very short, and he seems to have returned to Edinburgh apparently quite well, for about the close of 1831 we find him opening a shop as a bookseller and publisher, at No. 111 Nicolson Street, and naming it, after one of his periodical publications, "The Bawbee Bagpipe Office."

This "Bawbee Bagpipe" was published early in 1832, and is a fair specimen of his serial publications in matter, style, and typography. I am glad to be able, through the kindness of Mr Maidment, Advocate, Mr Deuchar of Morningside House, and Mr T. G. Stevenson, antiquarian bookseller, to show it to the Society, along with a large collection of his other writings. "The Edinbury Gleaner," "The Advocate," "The Paper Trumpet," were the titles of similar periodicals issued by him on different occasions.

Smith's old notoriety and old nickname still clung to him however, and the latter was now aggravated into "Daft Whisker Willie," in consequence of his residence in the asylum. His former ideas as to malevolence and persecution returned in full force; indeed, they seem never to have been entirely absent, but only in abeyance for a time, and he was constantly summoning persons to the Police Court for trivial injuries or imaginary wrongs.

These cases were either put aside as frivolous or decided against

the complainant; this of course confirmed or aggravated his notions as to the persecution he endured, and made him yet more impatient of the nicknames or mischief which the children of the district freely indulged in towards him.

These mischievous pranks were carried farthest in 1833, and were the occasion of his ninth appearance at the Police Court, and of other important events in his history. This grievance and its result can be best described in his own words, as contained in a long letter to the Lord Advocate, in which he bitterly complains of the injustice he received at the hands of the authorities.

"Case 9th.—Attempting to set the complainer's shop on fire, by putting gunpowder and a lighted match in at one of the bolt holes of the window. Offender caught in the act. Dismissed, not proven. Shame! sufficient proof when caught. Had the shop gone on fire, and my goods or the shop been insured, the insurance people would have handled the case and not allowed the defender to get off so easily; to a certainty he would have been banished; or if I could not have given a proper account of it going on fire, I would have been banished, or kept in jail for months.

"As I knew perfectly well that Tait would not give me justice in this case, no more than in my former ones, I wrote my mind on a large sheet of paper, and as soon as the offender was acquitted, I said loudly, in the hearing of all that were in the Court, My Lord, I knew perfectly well that you would not give me justice in this case no more than in my former ones. I have written my mind on this large sheet of paper, and intend to shut up my shop as soon as I go home, and paste the said grievance on the front of my shop, and I shall let you hear what it is:—

"SHUT

"In consequence of the injustice of the Police Court. The tenant of this shop has not only been grossly insulted by blackguards daily but hourly, by bawling in at his door and window most abusive language, blowing smoke out of a horn full of lighted tow into my shop, which caused me to imagine my shop was on fire. The blackguards broke five of the panes, each of which cost me two shillings and ninepence; the blackguards stole about £2 worth of my goods, and attempted to set my shop on fire by putting gunpowder and a lighted match in at one of the bolt holes of the window. Was I, the complainer, not in the right, and could prove it, or durst I have read my grievances in the Court or pasted them on the front of my shop to be read publicly."—*Police Retort*, pp. 25, 26.

This notice remained on his shop for about a month. At first Willie's irritation was greatly increased by the blackguard boys continually defacing it; and in consequence of this he placed it, I am told, on a board inside the window, with an intimation that he was himself stationed behind the board with a loaded gun, and would shoot the first person who tried to touch it. He and his parents lived after this in the back-premises, and the shop was never opened again.

In spite of these annoyances and interruptions, Willie continued to work zealously at his favourite avocation, and early in 1834, the year after the closing of the shop, he published a weekly periodical in six numbers, entitled "The Advocate," which was intended especially to expose his own grievances, and, as he tells us in an

appendix, "to let the public know that there is no justice got at law."

This "Appendix to the Advocate" was published in the same year, and contains some racy abuse of neighbours who had displeased him, copies of handbills about his grievances, and letters to the Lord Provost demanding redress.

In 1836, or thereabouts, he removed from Nicolson Street to Smith's Court, Crosscauseway, and worked chiefly as a joiner and toy-wright.

Change of residence did little to mitigate his annoyances; he was still an occasional complainant at the Court, but with as little justice as formerly, and the idea of personally exacting the vengeance which the law denied him as justice, became uppermost in his mind; he began to collect swords, firearms, and similar weapons in his house, apparently without any definite object or idea, except the vague one of revenge. He said to my informant "that if he could just get blood shed he would be satisfied, but that he must kill somebody."

Once more, and for the last time, we find him a complainant at the Sheriff-Court in 1839; but this case also was dismissed, and he now ceased to seek or expect justice at the hands of the authorities. His indignation settled itself chiefly on Sheriff Tait, whom he blamed above all others for the oppression and injustice to which he was subjected. My informant, who was for many years Smith's intimate friend, assures me that Willie frequently watched Sheriff Tait when passing along the street from his own house to the Court Room, and carried files, sharpened into daggers, in his pocket, in order to kill him.

The Sheriff was far from being the only object of his hatred and revenge; he detested and vowed vengeance upon all in authority, but especially upon the police force, the members of which he regarded as his bitterest enemies. Yet he seemed fully aware—and this secret consciousness of their condition is often seen in the insane—that something in his own behaviour did or might require their interference, for he began to fortify his house as if to resist their entrance. He had a sliding panel in the door, by which he could see or speak to any one without opening it, and a contrivance for barricading it, so that it could not be forced open; he had also a long spear with which to defend the entrance, and firearms which were always kept loaded.

When his friends asked the meaning of all these preparations, he told them it was for fear of his enemies, but especially the police.

In his last publication, dated 1840, and entitled "The Police Retort," his grievances are fully detailed in a letter to the Lord Advocate, and the spirit of revenge which now possessed him is very plainly seen. Two or three sentences from it will illustrate this:—

"He or she that breaks a man's or a woman's character justly deserves to suffer a cruel death."....."If I do not get justice in this said case, serious will the consequence be; and I humbly hope my fellow-citizens will assist me in battle, if one takes place, and raise a riot, as I have broken the ice for it, and have justice given them in future at Court."....."When I was apprehended before, I made no resistance in the smallest, but went as a lamb to the slaughter; but let them try to apprehend me now, and, if it is in my power, before they make me prisoner, I will make my entry swim with blood."

It was obvious to the authorities that such a character could no longer be allowed to go at large; but his apprehension was evidently to be a difficult matter, and only to be accomplished by stratagem. Accordingly, a sheriff-officer went to the house in disguise, pretending that he wished to buy a canary, of which bird Willie had now become a great breeder; but apparently his design was suspected, for, although Smith did not know him, he kept an axe in his hand during the visit, and told the stranger to come no nearer him than a certain mark on the table, or he would strike with the axe. The officer, thinking that Willie would forget, edged a little nearer, and just up to the mark, when he was startled by the axe coming down a firm blow into the table within an inch of his thigh.

The arrest was at length accomplished by an officer who went in disguise to look at the birds, and who said he would come back in the afternoon with two gentlemen from the New Town who were anxious to purchase some; they secured him when he was intent on the sale, by seizing him from behind, as he was getting down one of the cages.

He was committed to the prison of Edinburgh as a dangerous lunatic in December 1840. In March 1841, he was removed to the lunatic wards of the West-Kirk Workhouse, under the idea that he could be safely confined and cared for there; but this idea was soon dispelled, for before two months were over he murderously assaulted Dr Deas, the medical-officer of the workhouse, at his professional visit. On the doctor's entrance, Smith spoke to him in his usual friendly manner; but when he was about to leave the ward, suddenly attacked him with a shoemaker's knife which he had procured; he chased him downstairs, weapon in hand, wounded him slightly in the back, and it was only his accidentally stumbling, in his eagerness to strike another blow, that saved the doctor's life. This affray so terrified the workhouse officials that they were glad to thrust him into a cell in one of the outbuildings, and to keep him constantly there, handing in his food through the partially-opened door. The warrant for his removal to Morningside was soon obtained, but Smith was still armed, and his desperate character was so well known that no one would dare to enter. It was found necessary actually to unroof the cell, and to entangle his arms with ropes before he could be secured. He was then put in irons, and brought to the Asylum (31st May 1841); but the man who brought him was so terrified at his prisoner, and at the thought of his ven-

geance, that, I am told, he secured his own safety, as soon as Smith was within the house, by making off as fast as he could with the key of the wrist-locks in his pocket.

From this period the Asylum case-books furnish a complete record of his history; and even that record can be supplemented by the reminiscences of the older attendants. By condensing the information derived from both these sources, a correct sketch of the remaining twenty years of his life is obtained.

On admission to the Asylum the handcuffs were at once removed, and he was treated by Dr Mackinnon, the then superintendent, with much consideration and kindness. He was put under no personal restraint, and was granted as much freedom within the walls as was consistent with his safe custody. He obtained facilities for writing a more detailed history of his case, his taste for music was encouraged, and he was allowed to conduct the psalmody at morning prayers.

At first this treatment was apparently beneficial. Although his belief that he was the victim of persecution and injustice was unchanged, and although he daily vowed vengeance on those who were the authors of his wrongs, he used neither threats nor violence to the Asylum officials.

After about a year's confinement, however, he manifested his belief that they also were implicated in the oppression he had endured, and began to threaten vengeance of the direst kind; these threats were directed chiefly against Dr Mackinnon and his assistant, both of whom he declared he would murder. Additional precautions were therefore used, and he was more closely watched than formerly; but in spite of this vigilance he managed one day to pick up in the grounds a pointed rod of iron, which had apparently served as the spindle of a spinning-wheel, and had probably been turned up by the ploughshare. Recognising its fitness for his purpose, he concealed it about his person, sharpened the point in secret, warped a strip of a blanket round the other end of it for a handle, and then kept this formidable dagger in various hiding-places for no less than three months—as he himself subsequently confessed—deliberately waiting till he could get an opportunity to use it effectually. This opportunity at length offered itself in June 1842, when Dr Mackinnon and his assistant entered the ward one morning in the accidental absence of the attendant. Smith at once embraced it, and, without the slightest warning, suddenly sprang on the doctor when his back was turned, and stabbed him repeatedly with the dagger. When the assistant-physician, Dr Douglas, rushed forward to his help, Smith attacked him in the same manner, and wounded him in several places, striking so fiercely that, I am told, the note-book which he was carrying was pierced through by one of the blows. The attendant, hearing the noise, hastened to the ward, when Smith “ran into his room, threw the weapon out of the window, and resigned himself to his fate, fully

believing that he had killed his victims, and that his own life must pay the penalty of his crime."

Fortunately, none of the wounds were dangerous, and both the doctors recovered to care for the man who had well-nigh murdered them.

This assault was only the manifestation of a revenge and blood-thirstiness which had long been slumbering; even at the time of admission the same fierce desire for blood possessed him; and he often told afterwards that many a time when Dr Mackinnon was conducting morning prayers, and he was sitting near him as precentor, he "could scarcely keep from rising and braining the — with the chair he was sitting on." He always gloried in this murderous attack, and only lamented that he had not been more successful.

In consequence of this affair, Smith was removed to another room, and his liberty restricted, although no personal restraint was used. He continued to vow yet greater vengeance, and to mutter fierce threats against all the officials. He often attempted violence to the attendants, and it was found necessary for their safety to prohibit any one from going alone to his room.

In spite of these precautions, about six months after the assault on the doctors, he attacked two attendants in his own room with a piece of wood which he had broken off from his chair; fortunately, the scuffle was heard, and by additional assistance Smith was overpowered. He, evidently, hoped to have overcome the attendants, then to have obtained possession of a key, and so made his escape.

Each disappointment only made him, if possible, more blood-thirsty and vindictive, fiercer in his threatenings, and bolder, more ingenious, and more persevering in his attempts to fulfil them. The man's whole life was a study how to murder, and he was constantly gloating over the thought and hope of a cruel and bloody revenge.

In 1845, he made another attempt to murder an attendant, which shows well the deliberateness and cunning with which his plans were made. While walking in the airing court, he picked up quite carelessly some cuttings of lead, which had been allowed to fall there by workmen who were repairing the roof; these scraps he carefully secreted, then tore away a large piece of lead from the water closet, and kneaded the whole into a heavy ball; this ball he enclosed in a network of strings, shoelaces, strips of handkerchiefs, etc., and fastened it loosely to the end of a short stick—thus forming a heavy life-preserver. The secret fabrication of this weapon must have occupied him for months, for all was done in spite of the closest vigilance, and we can imagine how he lightened his anxiety in constructing it, by glorying in the anticipation of the bloody vengeance it was to procure. When the weapon was ready for use, he waited until it was the turn of a certain attendant whom he specially disliked, to make the night visit. When this night arrived,

Willie stationed himself behind the door of his room, and quietly waited for his entrance; when the attendant was opening the door, Willie suddenly stopped it with his foot, so as to prevent it from opening further, and the man naturally put in his head to see what was holding it; this was exactly what Willie had calculated on, and he bestowed on the instant a murderous blow with his weapon. The man was severely injured, and a large piece of the scalp was detached, but he was still able to struggle with Smith, and had overpowered him even before the noise had brought others to his help.

Smith was now constantly confined to his room, except for an hour daily, which he spent in the airing court under charge of one or two attendants. He was as querulous, irritable, and dangerous as ever, but spent a great deal of time in writing to the Sheriff and others, an account of his "seven new inventions," and offering half of the profits to any one who would liberate him. These new inventions included the discovery of perpetual motion, and other schemes equally extravagant; they constitute the first very obvious manifestation of intellectual insanity, supervening on the moral perversions he had laboured under so long.

On the appointment of a new physician to the Asylum in 1846, Willie confidently hoped to obtain justice and liberty. He wrote for Dr Skae a very full account of his life and grievances, described with much ingenious colouring his murderous attacks on his former medical attendants, and said that he would give the new doctor a definite period to judge of his case, and make up his mind about it, before pronouncing his curse upon him.

When he found that he was not to be liberated, his indignation knew no bounds, and he gave notice that on the twelfth day of the following month he would kill one of his attendants.

In consequence of this threat and the terror which it inspired, in consequence too of the perseverance, cunning, and ferocity which it was known he would use to fulfil his purpose, it became necessary for the first time to have recourse to personal restraint; it was effected by a belt fastened round the waist, to which handcuffs or rather wristlets were loosely attached, so as to permit and yet limit the free use of the arms. The restraint was applied on the day preceding the one he had fixed for the murder; he did not know of its intended use, and at once prepared to resist desperately; but observing other attendants in reserve, and seeing that resistance would be hopeless, he submitted to its application amid tears of vexation and sorrow.

The effect at first seemed beneficial, and he refrained for a time from his threatenings and curses; but this was very transient, for very soon after its application, he declared he could not possibly take his food with it, and in the most friendly and coaxing way he tried to persuade an attendant to try on the belt in order to prove the truth of his statement. His intention was so obvious, that, fortunately, it defeated itself, and the man declined to fasten his own

hands in order to facilitate his strangulation. The next entry in the case-book shows both the gradual weakening of his mental faculties, and the unimpaired intensity of his morbid feelings. "At present he is in a state of partial dementia, with exaltation of the feeling of pride, and high ideas and delusions regarding his own powers and capabilities, particularly as an engineer, architect, and musician. . . . He sometimes soliloquizes upon the persecutions and insults he has received from his enemies, threatens vengeance upon them, and blasphemes God in a most awful manner for permitting such occurrences."

In the beginning of 1849, restraint was discontinued, except when he was out walking, but mentally he was unchanged, and the same precautions and vigilance were still required. The last quotation from the case-book sufficiently describes his condition in 1850 and 1851, while in 1852 he is said to be, "*if possible*, more than ever full of murderous threats."

In 1853, he was summoned before the Sheriff, in consequence of a letter he had surreptitiously sent to him, in which the lives of the attendants and physician were fiercely threatened, and was by the sheriff's order committed to the Edinburgh Prison. In three months, or rather less, he was brought back to the Asylum, not improved as we can well suppose, by his imprisonment. In proof of this, the following entry occurs a few months later:—"This day, upon his attendant going into his room, in order to take him out for an airing, he suddenly threw himself forward and tried to grip him by the throat; fortunately, he was secured before he could accomplish his design. In the scuffle a spoon sharpened at the handle fell from his bosom. Doubtless, had he succeeded in keeping down the attendant, he would have at once proceeded to dig out his eyes, a threat which he has of late repeatedly uttered."

A favourite amusement with him about this period, and one which illustrates well his love for cruelty and murder, was to entice mice into his room, by leaving some of his food near a hole in the corner; he prevented their escape by closing the hole, killed them by tearing them into quarters with his fingers, and had the pieces arranged in a row in the morning to show his attendants how he would treat his enemies if he could.

In the following year, 1854, he made another murderous attack on an attendant with a weapon similar to the life-preserver formerly mentioned. He had made this one in the same way,—a stone which he had picked on the airing ground, in spite of the constant presence of attendants, serving instead of lead. When the weapon was ready for use, and a proper occasion offered, he purposely left some bread on the floor of his room that he might get a better blow at the attendant as he stooped to pick it up. The attendant, however, was on his guard, and drew back in time to save his head, although not his shoulder; a sharp struggle ensued, which was happily overheard by the night-watch, and with his assistance Willie was secured.

It is scarcely possible to find language strong enough to describe the bloodthirsty passion which possessed the man, the devilish ingenuity, deliberateness, and determination with which all his attacks were made, or the fiendish delight with which he gloried in relating them, and revelled in the thought of a merciless and bloody success.

In 1855, his health began to give way, but he still indulged in fierce threatenings far beyond his power of execution. In this year restraint was finally discontinued, and he was taken regularly under special charge of an attendant to the chapel and the weekly ball—privileges which he highly valued. He spent his time chiefly in writing songs, anthems, and choruses, which were the names he gave to miserable attempts at music with original words attached. Upon these he set great value, delighted to rehearse them to the medical officers, and spent many a solitary hour in transcribing them.

Occasional days of murderous vows and threatenings varied the monotony of his life; but they were not quite so frequent as they used to be, probably, because he had found other occupations now.

Years passed away thus; and they may be described in a single sentence:—gradual mental deterioration, with persistent and unquenchable desire for revenge and blood.

In 1858, I first made Willie's acquaintance, and a visit to his room then was a thing to be remembered. You might have noticed, ere leaving, the strength of the door, the absence of all furniture except a fixed bed, the height of the window which Willie insisted on having open even in the depth of winter, and the many writings and drawings on the wall, but your attention would certainly have fixed itself first on Willie himself. He was always to be found sitting up in bed, with his inkbottle beside him and his manuscripts on his knee.

He was now a bent old man, with coarse wiry brown hair, fast turning to grey, as his "haffits" showed, for he disdained to doff his "Kilmarnock" in the presence of any visiter. He had greyish whiskers, and long grey, shaggy eyebrows, overhanging deep-set little grey foxy eyes that gleamed with cunning and cruelty. He had a very decided nose and a good brow, while his mouth and chin told you he had once been a man who could both dare and do. His manner was rude and defiant, as if his visiter had done him some personal wrong. If you attempted general conversation or offered anything like an agreeable or friendly greeting, the answers were short and blunt. He at once gave you the impression that he had found a savage satisfaction in turning his hand and hatred against every one, seeing that every one had turned his hand against him. If you asked what he was writing, you were probably told that it was Smith's version of the Queen's Anthem, that he was the prince of singers, and would let you hear it sung. The words were doggerel and the music poor enough, but the honour they rendered was sincerely meant; and it was indeed a strange sight to see the weird

old man, who had spent so much of his life in this solitary room, doffing his Kilmarnock, raising himself in bed with the dignity of a poet-laureate, and singing with heart and voice the praises of our honoured Queen.

He professed to be indifferent to praise, as already perfectly satisfied with his own performance, still it was not unwelcome. Ere you left, he was almost certain to tell you, if he thought you worth speaking civilly to at all, that he was going to remain in the Asylum no longer; that he had already shown what he could do, and was determined ere the week was over to murder the doctor or some of the attendants. That he had houses in Edinburgh, whose accumulated rents now amounted to a large sum, and that even if he had nothing, his own inventions would secure him a fortune; that therefore they had better let him out before he kills some of them, for if he has to begin he'll soon "do the trick for them and give them a most unmerciful cruel death." When the subject of his murderous attempts was introduced, he delighted to rehearse them to his visiter; they lost nothing in the recital, and he always darkly hinted of some deed far more terrible than these which he was about to perpetrate. If he was pleased with you and your visit, he probably would offer or promise you a copy of the anthem he had sung.

In the end of 1858, he had a slight apoplectic attack, but its effects were very transient and did not alter his mental condition.

In 1859, he was as poetical, loyal, and homicidal as ever. He frequently appointed days for murdering certain people, and had always some ingenious reason for his non-fulfilment of the threat. When he failed to find a good excuse, he said it was in order to show that he was a merciful man, and not the bloodthirsty villain they took him for. In further support of this, he used to quote occasions when he might have brained or strangled an attendant and yet refrained, not recognising that this very argument was a confession of how constantly the thought of murder was uppermost in his mind.

About this time Willie was offered the privilege of a visit to Edinburgh. For almost twenty years he had never been beyond the grounds of the Asylum, and had spent most of the time in his solitary room. He was, from old age and increasing dementia, by no means the formidable man he once had been; and it seemed that this indulgence might with proper precautions be safely granted, and might add a little happiness to his lonely life. He was much elated at the prospect and very grateful. He selected the night-watch as the person who should accompany him, and at the time appointed he was ready, dressed in the best suit the attendants could procure. He went to the door full of eager anticipation; but as soon as he saw the carriage waiting for him, and understood that he was not to walk through the town as he had intended, he turned and went straight back to his room, threw aside the new suit, and absolutely refused to go.

He had evidently intended mischief, and was so mortified at his purpose being thus thwarted under the guise of special kindness, that no persuasion could induce him to change his resolution.

He still continued to attend the ball regularly under special charge of an attendant, and was present by his own desire at a meeting of the glee club. He did not join in the singing, but said that "Smith the critic and victor of singing could sing them all blind and deaf."

In the autumn of 1860, his bodily health began to fail very much, and, although he recruited a good deal in summer, he was never quite free from bronchitis and asthma. The next winter brought with it great aggravation of his illness; but throughout it all his mental condition remained unchanged, and he might have been seen gasping his vows of murder or his loyal anthems during a paroxysm of dyspnoea. It was not in his nature to yield.

But Nature herself yielded at last, and he died about the age of 73, on the 3d of December 1861.

The autopsy revealed the ordinary signs and sequelæ of chronic bronchitis, as well as many evidences of very chronic brain disease.

The brain seemed somewhat atrophied and smaller than usual, the cerebrum weighing but $35\frac{1}{2}$ ounces, and the cerebellum $5\frac{1}{2}$ ounces. The arachnoid generally was opaque and slightly thickened, but its sac did not contain more than a drachm or so of fluid. The lateral ventricles contained very little fluid, too little to be collected and measured. There were found three very distinct softenings, one about the size of a filbert in the anterior extremity of the right corpus striatum, another of about equal size under the floor of the posterior cornu of the right lateral ventricle, and the third about the size of a field-bean in the centre of the left optic thalamus. They all contained similar semi-fluid matter of a dirty, greyish-white colour, and were all apparently of old standing. All the arteries of the brain were more or less atheromatous.

The softenings in the corpus striatum and the atheromatous arteries are well seen in this preparation. The appearance of the softened matter under the microscope, was just what is usually seen in old softenings,—atheromatous vessels, compound granular cells, abundance of fatty granules, molecular matter, and fragments of disintegrated nerve structure.

Even the skull itself was not exempt from the consequences of this protracted disease of the brain, for it was found to exhibit a pathological change, or perhaps I should rather call it a physiological accommodation, which has never, so far as I know, been certainly observed before. On comparing the cast of the head taken after death with another taken about seventeen years before, there was found to be a very remarkable difference between them, not in form only, but also in size, the head having become less during these seventeen years by an amount equal to at least 12 cubic inches.

A case so singular and so suggestive requires very little in the way of comment. Allow me, however, for the sake of rendering the case more complete, to offer a very few remarks suggested by it; and for the sake of brevity and distinctness let me put them under three several heads—physiological, medico-mental, and medico-legal.

1. *Physiological*.—This remarkable alteration in the size and form of the cranium during adult life deserves special notice. It is generally believed that all alterations in the brain substance which imply diminution of its bulk, are compensated for by the effusion of fluid, so that the entire volume of the cranial contents is always the same. From this case it would seem that this effused fluid, which we can be very sure once existed in Smith's cranium, may slowly disappear, and the osseous case gradually accommodate itself to the diminished size of the organ it contains. The possibility of such changes in the cranium has usually been admitted, but I am not aware of any other case where it has been actually observed. The long term of years that must elapse, and the small probability of correct measurements having been taken at first, of course render opportunities for such observations exceedingly rare.

I am glad to be able to show both these casts, along with the skull itself, to the Society, that my statements or measurements may be open to question or capable of proof, and that the actual alterations may be more readily appreciated than by any description. One of the ears of the older cast has unfortunately been broken off, and perfectly accurate corresponding measurements are thus impossible; but I have endeavoured in some measure to make up for this, by drawing a line round the head of both casts on the level of the eyebrows and the occipital protuberance, and at as nearly as possible the same level on both. I have submitted these lines to several medical friends to test their fairness and accuracy, and all have agreed in thinking them as correct as they can be made. I have allowed these lines to remain on the cast, that the Society may judge of their fairness. I have ascertained the difference in cubic inches by filling a vessel with water till it overflowed, and allowing it to settle brimful, then immersing each cast in turn as far down as the line, and measuring the difference in the quantity of water displaced by each. The various external measurements were easily made by tape and calipers, and the various circumferential curves were transferred to paper by means of mouldings in wax, verified subsequently by actual sections of casts moulded from the original ones. I am aware that exception will be at once taken to the correctness of these measurements; and I do not contend for their perfect accuracy. The shrinking of the tissues after death, the diminished quantity of fat under the scalp in old age, and the imperfection of the ears in the older cast, all tend to vitiate the results; but, allowing fully for all these sources of error, the difference in size still remains both very considerable and very remarkable.

The change in form is also very marked, and is at once apparent

on looking at the two casts side by side. It affects, of course, the roof or arch of the skull, the solid base remaining unchanged. It is chiefly obvious in the shortening of the distance between the root of the nose and the occipital spine, and in the change of the corresponding arch. This diameter is nearly three quarters of an inch shorter in the more recent cast; while its arch is correspondingly smaller, and exhibits marked flattening or subsidence in the frontal and occipital regions, with comparatively little change in its parietal segment.

The actual shape and size of the heads, and their relative differences, are seen at once by looking at the accompanying outlines of different sections of the cranial vault, where the single line exactly represents the segment in the old cast, and the dotted line the same segment in the new one.¹

This alteration of the form of the skull has a remarkable correspondence with the mode and order in which the different cranial bones become ossified and solidified in youth; for the parietal bones, although not the earliest to begin to ossify, form the part of the vaulted roof which is first built, and the frontal and occipital bones close the ends of the cavity, and so complete it. The parts of the cranial roof most recently solidified are thus the parts where the contraction has chiefly occurred.

There is no physiological reason against the occurrence of such changes; on the contrary, analogy would lead us to expect them,—for why should *bone* be the only structure which does not accommodate itself to the changes in neighbouring or in contained organs.

These casts are very interesting phrenologically, as showing at what an advanced age such cranial alterations may take place. I have not been able to ascertain Smith's exact age, but there can be no doubt that these changes occurred after the age of fifty. Those who believe in the phrenological distribution of organs will eagerly ask as to the correspondence of the cranial alterations with the relentless and bloodthirsty dispositions manifested during and after their occurrence. So far as I can judge, I am bound to say that they seem to favour the phrenological theory; but the wisest phrenologists reject entirely all evidence derived from cases of unsound mind, whether that evidence be for or against their doctrines. This is at least prudent, whether legitimate or not, for phrenology would certainly derive no support from this department of medicine.

¹ EXPLANATION OF THE OUTLINES.—1. Horizontal section of both casts at the level of the eyebrows and occipital spine. Circumference,—old cast, 23 in.; new, 22 in.—2. Vertical section of both casts in the line of the longitudinal arch, from the root of the nose to the occipital spine: corresponding diameter,—old cast, 8·25 in.; new, 7·62.—3. Transverse vertical section at the junction of the anterior and middle thirds of the longitudinal arch: corresponding diameter,—old cast, 5·30 in.; new, 5·15.—4. Transverse vertical section at middle of longitudinal arch: corresponding diameter,—old cast, 6·10 in.; new, 6·20.—5. Transverse vertical section at the junction of the middle and posterior thirds of the longitudinal arch: corresponding diameter,—old cast, 5·70 in.; new, 5·60.

2. *Medico-Mental*.—We may hope that the progress of cerebral pathology will gradually enable us more frequently to associate certain mental conditions with the occurrence of cerebral disease of certain kinds, or affecting certain particular parts. But as yet this is very often impossible, and we cannot, for example, establish any distinct or necessary connexion between the cerebral softenings and the insanity in the case I have read, however strongly we may believe in its existence. We must therefore be content to look at Smith's insanity from the psychological rather than from the pathological side.

Homicidal insanity has, nosologically, at least, three distinct forms. The first is *Homicidal Monomania*, properly so called, and consists simply in a morbid impulse to shed blood, for which no reason or motive can be assigned. The impulse may be sudden and irresistible, urging the patient at once to the perpetration of some horrible deed, or it may have the form of a more or less constant and almost irresistible desire to kill. The patient is otherwise apparently sane, but can give no explanation of the feeling, and often bitterly laments it. A convenient object or opportunity stimulates the morbid desire, and its recurrence at different periods in the life of the individual is not infrequent. Besides this desire or impulse, no other sign of insanity can be detected. It is a case of purely emotional monomania,—as purely emotional, at least, as monomania can ever be,—for surely the mere fact that a motiveless impulse takes possession of a man, and irresistibly urges him to commit acts from which his whole nature would formerly have revolted or revolts even now, proves of itself that the mind is unsound and weak, by the very absence of that self-control which in a healthy mind would correct, or restrain, or banish such morbid thoughts.

As an illustration of the sudden irresistible impulsive form of this disease, I would quote the first of a very valuable series of cases published by Dr Thomson of the General Prison, Perth, in the *Edinburgh Medical Journal* for June 1862. It is the case of a man who murdered his own son by stabbing him with a table-fork with which the child was playing. "No premonitory symptoms were known; he became at once intelligent after the act, and under bitter remorse exclaimed, 'I was impelled by the devil.'" Nearly seventeen years after this attack, the homicidal impulse returned, the patient begged to be secluded from the others, and entreated the warder to shut the door of a fellow-patient's room, "for, when passing, he felt himself strongly tempted to rush in and murder him." This attack lasted about a week, at the end of which time he said he might now safely be allowed to go about as usual.

As an illustration of the almost constant and almost irresistible desire to kill, I mention the case of a woman who came to the Asylum some time ago, along with her husband, to consult Dr Skae. She said that every forenoon, as soon as her household work was over, and she had nothing to occupy her attention, she was seized

with an almost irresistible desire to murder her children. She lamented the horrible feeling, and could in no way explain it, for she loved them tenderly, but was obliged daily to leave them in the house and walk up and down before the door till her husband returned from his work, lest the murderous impulse should prove too strong for her if she remained beside them.

The second form in which homicidal insanity shows itself to the alieniste is that of *Homicidal Impulses occurring in Melancholia*. This form is allied to the last, but quite distinct from it. There is insanity *already existing* in the form of melancholia, and the homicidal impulse is but an intercurrent phase of it. Illustrations of this type of the disease are found in cases where a despairing mother murders her children, that they may reach heaven in peace, and may never become hopeless and wretched like her; or where a husband kills his wife, and then himself, that they may both be delivered from the gloom and misery with which his melancholy has enveloped their home. It is in this class of cases that homicide and suicide are so often associated; and the homicidal melancholiac has even been prompted to the deed by the hope of being executed as a criminal, and so delivered from the life which he loathes.

The third nosological form of homicidal insanity is *Homicidal Mania*, strictly so called, where insanity already exists in the form of mania, and where delusion of some kind has occasioned or prompted the murderous desire or deed. The motive or object may be of the most inadequate or insane kind, but it fully justifies the patient in his own eyes, however frivolous it may seem to others, or however insufficient to justify murder even had the delusion been true.

Illustrations of this form of the disease are not infrequent. In the Perth Asylum there was very recently a patient who believed that another of the inmates was continually annoying him by mesmerism, and, under the influence of this delusion, he one day assaulted his tormentor so fiercely, that the man died from the injuries he received. And, in the Morningside Asylum, there was lately a patient who almost murdered his son, under the belief that God wished to prove his faith as he did Abraham's of old.

The murderer may imagine, like a patient at present in Morningside, that she is the messenger of Jehovah, and that the Divine glory demands a sacrifice; or, like the subject of my sketch, he may insanely magnify trivial annoyances into grievous wrongs, which can only be wiped out with blood.

I believe these three *nosological* varieties include all the cases of homicidal insanity; but, of course, the classification is not absolute, and the varieties may merge into each other. It would be easy to multiply illustrations, and to quote cases already published, but it is unnecessary, and time forbids.

In the case I have read, the homicidal impulses, which were so fierce and persistent, were only the ultimate and farthest development of what was at first nothing more than justifiable displeasure

at real annoyances. The natural "touchiness" of temper which could not bear even a nickname, and summoned a man to the Police Court for shouting it, can scarcely be regarded in any sense as insanity; but the injustice with which he thought the case was dismissed, and the consequent increase of his annoyances, soon aggravated his irritability into insanity of the most dangerous kind,—a mania which was continually thirsting for revenge, and deemed no vengeance, however bloody or cruel, a sufficient satisfaction for the wrongs he believed he had endured. Yet his numberless homicidal attempts were so obviously the result of a deliberate intention to murder, and were planned with such care and acuteness, that, if he had unhappily succeeded in any of his earlier attempts, and had been brought to the bar as a criminal, I think it very unlikely that any ordinary jury would have considered him insane. This leads me to say a very few words on the legal aspect of such cases.

3. *Medico-Legal*.—In regard to cases of this nature, the medical jurist is in the position of a judge as well as of a physician. He therefore cares little for nosological distinctions like the above, and inquires rather as to the motives for the act, the person's knowledge of what he was doing at the time it was committed, the existence of other proofs of insanity, and the degree of self-control which the accused was able at the time to exercise,—he is aware that there may be an avowed motive, careful premeditation and planning of the deed, a perfect knowledge of its criminality and of its legal consequences, and yet that the murderer may be insane and not deserving of death. The essential questions in his eyes are the existence of other unquestionable proofs of insanity, and whether the person had at the moment such consciousness of his act and such command over himself that he *could have refrained* from the deed. If he had not such self-control, he is not guilty or responsible in the same sense as other men.

The law, however, disdains all such refinements, and rejects as worthless the testimony of medical experience. At the second reading of the Lunacy Regulation Bill, the Lord Chancellor lately declared in the House of Lords, that "the introduction of medical opinions and medical theories into the subject has proceeded upon the vicious principle of CONSIDERING INSANITY AS A DISEASE, *whereas the law regards it as a fact*, which can be ascertained by the evidence in like manner as any other fact. Therefore we empanel a jury of ordinary men, and call upon them to try the question by proof of the habits, the demeanour, the conversation, and the acts of the alleged lunatic."

And this extraordinary speech is only a parallel to the answers given by the fifteen judges to a series of questions on this subject submitted to them by the House of Lords in 1843, and suggested by the trial of M'Naughten for the murder of Mr Drummond.

I shall quote the words of their answers, as they are brief, and constitute the most important deliverance on this subject.

“Notwithstanding a party commits a wrong act while labouring under the idea that he was redressing a supposed grievance or injury, or under the impression of obtaining some public or private benefit, he is liable to punishment. The jury ought in all cases to be told that every man should be considered of sane mind until the contrary was clearly proved in evidence; that before a plea of insanity should be allowed, undoubted evidence ought to be adduced that the accused was of *diseased* mind, and that at the time he committed the act *he was not conscious of right or wrong*. Every person was supposed to know what the law was, and therefore nothing could justify a wrong act, except it was clearly proved that the party did not know right from wrong. If that was not satisfactorily proved, the accused was liable to punishment. If the *delusion* under which a person laboured were only partial, the party accused was equally liable with a person of sane mind. If the accused killed another in self-defence, he would be entitled to an acquittal; but if the crime were committed for any supposed injury, he would then be liable to the punishment awarded by the laws to his crime.”—*Brit. and For. Med.-Chir. Rev.*, July 1843, page 273.

By the law, therefore, Smith would certainly have been condemned and executed had he unfortunately succeeded in any of his homicidal attempts, for he was perfectly aware of the criminal nature of such deeds and of the legal penalties they implied, and any “jury of ordinary men,” testing his condition, as the Lord Chancellor directs, “by his habits, demeanour, conversation, and acts,” would, in the earlier part of his history, have most undoubtedly pronounced him guilty; yet surely the latter part of his life demonstrates that this would have been most unjust, and his execution nothing less than a judicial murder.

The case of Clark who was lately tried for murder at Newcastle, in many respects resembles the one I have read, and illustrates well the imperfection of the law in such cases. In revenge for supposed injuries Clark murdered a tax-gatherer on the public street, and on trial for the deed he was found guilty and condemned to die. The medical evidence was strong and clear as to the existence of insanity. The prisoner believed that he was Jesus Christ, and his conduct at the trial, where he conducted his own defence, was certainly very insane; yet the jury, recognising a motive for the deed, and acting on the principle laid down by the Lord Chancellor, found him guilty of murder; the judge declared his belief that he was responsible for his conduct, and the poor lunatic was sentenced to death.—*Med. Critic and Psycholog. Journal*, April 1862.

Immediately after the trial, as if to put in their strongest light the absurdity and the danger of the legal views of insanity, the judge wrote to the Home Secretary to direct attention to the peculiar circumstances of the case and the strong evidences of insanity, the result of which and of the steps taken by the public, was the respite of the sentence on that ground. A man who believed himself to be

Jesus Christ was by the law condemned to death as a criminal, and then the crown was besought to interfere to prevent the law taking its course! The Lord Chancellor is the legal guardian of all the insane in England, and ought, therefore, to be an authority on insanity; but the extraordinary principles he has propounded have received a prompt, opportune, and conclusive answer in the verdict of his model "jury of ordinary men" lately assembled at Newcastle.

It is high time that the ridicule and contempt with which medical men are so often insulted when testifying to insanity in courts of law, should be thrown back on those who deserve it. They are regarded sometimes almost as partisans of the criminal, who wish to screen him at the expense of truth and justice, and this by those whose ignorance of mental medicine rather aggravates than excuses such treatment. The state of the lunacy laws generally is very discreditable to the legal profession, and affords very uncertain justice to the criminal lunatic. The question of degrees of insanity with corresponding degrees of general capacity and criminal responsibility, has received far too little attention. A man may be quite able to go at large and to mix with the world like other men, but quite unable to manage his own affairs with discretion or safety; and another may be quite unable to be at large or to mix with the world, and yet quite able to manage his own affairs with propriety and intelligence. There are surely degrees, too, of criminal responsibility. In one insane person the intelligence and self-control may be so perfect that death would be a righteous penalty for murder. In another, the insanity may be so far apart from the crime, that it would modify responsibility only as evincing a weakened state of the mind generally, and should, I think, modify the penalty, not absolve from it. Whereas in others the homicidal act may itself constitute the insanity, or may be so directly connected with delusions, that the individual is quite irresponsible.

"A jury of ordinary men" cannot possibly decide such questions, and I believe they will never be satisfactorily settled until medical experts have a more prominent place in their adjudication, and until the law recognises more distinctly the various phases of insanity, and the different degrees of imbecility.

I am sorry that these remarks have unintentionally grown to such length, but I cannot conclude without expressing the great obligation I am under to my friend and chief, Dr Skae, for permission to report this case, and for valuable advice and assistance in doing so.

ARTICLE II.—*Observations in Clinical Medicine.* By J. WARBURTON BEGBIE, M.D., Physician to the Royal Infirmary.

1. *Lead Impregnation and its Connexion with Gout and Rheumatism.*

THE symptoms which manifest the injurious operation of lead upon the system have long been familiar to physicians, and have, more especially of late, been carefully studied. Epidemic Colic was described by Baillou and Riverius in the sixteenth, while in the succeeding century the same disease was with much accuracy delineated by Francis Citois, a physician of Poitou. The observations of Dr, afterwards Sir George Baker,¹ of Drs Warren, Hardy, and John Hunter, besides other English physicians in the eighteenth century, satisfactorily determined that the peculiar form of Colic noticed by the earlier writers, as well as the endemic disorder of Devonshire and Derbyshire, of Surinam, and other localities, was due to the same general cause, namely, the introduction of lead into the system. Since that time, under the names of Lead Colic, Saturnine or Painter's Colic, Colica Pictonum, and various other less distinctive appellations, the severe abdominal pain, usually the earliest in its appearance of the characteristic symptoms of lead impregnation, has been known and described. From a very early period, likewise, the peculiar and interesting form of local paralysis which occurs in connexion with, for the most part succeeding, the colic had been noticed; the loss of power over one or both hands is well represented by Citois, for example, in the following words:—"Manibus incurvis, et suo pondere pendulis, nec nisi arte ad os et cæteras supernas partes sublatis." More recent observation of lead impregnation has shown, that the nervous system in this disorder is apt to be affected in two, though not in two separate and distinct ways; firstly, the nerves in particular parts of the body suffer; and, secondly, the nervous centres themselves become affected; the latter event occurs only in the severer forms of the disease, and, succeeding the paralysis, affords evidence of the contamination being more than usually powerful: this is shown in general convulsions attended by loss of consciousness. A very important corroborative proof of such symptoms as those now mentioned being due to lead impregnation, was first pointed out by Dr Burton,—namely, a blue or bluish line seen along the free margin of the gums, but absent where a tooth or stump is wanting. This blue colour Mr Tomes has proved to result from a chemical action exerted by the lead which has entered

¹ An Essay concerning the cause of the Endemial Colic of Devonshire. 8vo, London, 1767. Of this inquiry it has been truly remarked, that it presents "one of the best examples modern times have afforded of the method to be pursued in medical inquiries, and constitutes a model for all who are labouring to extend the boundaries of medical science."—Dr MUNK's *Roll of the Royal College of Physicians of London*, vol. ii.

the system upon the tartar of the teeth. In addition to these particulars of interest and importance relating to the diagnosis and pathology of lead impregnation, Dr Garrod, first in 1854,¹ and again more fully in 1859,² has satisfactorily demonstrated that lead exerts a remarkable influence as a predisposing cause of Gout. The general characters of lead impregnation are very well exhibited in the two cases, a short notice of which succeeds, while the relation of this disorder to gout is in them also very strikingly evidenced. These cases have occurred in the ordinary course of hospital experience, and are among several of the same nature of which I have preserved the record. I cannot confirm the statement made by a very eminent authority, Dr Christison, that "poisoning from protracted exposure to lead is a very rare occurrence in Edinburgh,"³ any more than my hospital experience leads me to regard "gout as occurring very rarely." That both disorders are more frequently met with in the hospitals of London than in our city does not admit of doubt, and, in explanation of this circumstance, reasons altogether satisfactory have been afforded; but, on the other hand, neither of them can, according to my own experience, be looked upon as at the present time of so unfrequent occurrence as the observations of Dr Christison, just quoted, would tend to imply.

CASE I.⁴—W. B., æt. 30, a house-painter, admitted to Ward V., 6th May 1862. Has followed the occupation of painter since he was thirteen, always mixing his own colours. For many years his habits have been intemperate. He has consumed porter and ale freely, but has very rarely indulged in whisky.

About four years ago, suffered for the first time from colic. This attack was slight; but in the course of twelve months was succeeded by a second, much more severe, and attended by great constipation. Since then he has suffered repeated attacks of colic, till thirteen months ago, when the earliest indications of paralysis appeared: the fingers of the right hand being first affected. The paralysis gradually increased, and, ten months ago, both hands were disabled. During this time he has had several severe convulsive seizures, attended by complete loss of consciousness. *On admission*, the patient presents a well-marked example of wrist-drop in both arms, and is quite unable to extend the hands. He can flex the latter, but not firmly or completely. The muscles of the upper-arm and shoulder are quite unaffected; the extensors of the fore-arm are evidently considerably wasted, and the muscles of both thumbs still more so. There is a good deal of tremulousness visible when movements of the upper limbs are made. There is no loss of power in the inferior extremities, and the patient voids water without any difficulty. The amount of urine is considerable: it is of pale colour, acid reaction, having a density of 1.010, with a very faint trace of albumen. The bowels are now no longer confined. A distinct blue line exists along the free margin of the gums, and the teeth are much discoloured. Was ordered as follows:—

R Potassii Iodidi, ʒij.

Aquæ Distillatæ, ʒxij.—*Solve.*

Sign. Sumat cochlearia duo ampla bis indies.

¹ Medico-Chirurgical Transactions, vol. xxxvii., 1854, p. 181.

² The Nature and Treatment of Gout and Rheumatic Gout. London, 1859, p. 281.

³ Dr Garrod on Gout, p. 284.

⁴ Reported by Mr Thomas Walker, B.A., Clinical Clerk.

10th May.—Complains of severe pain in the ball of the great toe of right foot, and also in the right ankle-joint. The former is considerably swollen and tender; the cutaneous surface is also reddened. Patient states that he has suffered greatly from pains in different joints, and that on three former occasions the joint of the right great toe now affected has become of a bright red colour, much swollen, and exquisitely painful.

In addition to the iodide of potassium, the following prescription was ordered:—

R Extracti Nucis Vomicae, Extracti Colchici Acetici, ā ā, gr.vj.

Alōini, Lupulinae, Extracti Hyoscyami, ā ā, gr.xij.—M.

Fiat massa in pilulas æquales duodecim dividenda.

Sign. Una mane et vespere quotidie sumenda.

To have white fish and fowl, in addition to the common diet of hospital, withdrawing the boiled beef.

14th May.—An improvement in the power of extending the hands, especially the left, has been noticed during the last few days. Gouty affection of foot has almost entirely disappeared. There exists very evidently, however, a chronic enlargement of this articulation, as well as of the corresponding one of the left foot, in which he also admits he has not unfrequently experienced severe pain. Is to-day suffering from a feverish attack. Ordered to keep bed, and omit the medicines prescribed.

19th May.—Quite recovered from the febrile indisposition. Former treatment resumed.

From this date to 1st June continued to progress favourably. On the latter day was again feverish, and complained of palpitation, with pain, in the region of the heart. On auscultation, a bruit, following rather than accompanying the ventricular systole, was audible, most distinctly heard near the xiphoid cartilage. Pulse 120; pains felt in joints of arms and legs; tongue coated; breath foul. The iodide of potassium and pills were again omitted, and, after the operation of a purgative, the following mixture was commenced:—

R Potassæ Nitratis, ʒij.

Potassæ Acetatis, ʒvj.

Aquæ, ʒviiij.—*Solve.*

Sign. Sumat cochleare magnum ex aquæ cyatho sexta quaque hora.

3d June.—Feverishness continuing. Bruit audible as before.

5th.—Heat of skin and frequency of pulse somewhat diminished. Bruit very distinct, heard along the whole sternum, but most clearly a little to the left of the xiphoid cartilage. Precordial pain recurs from time to time. Was dry-cupped to-day.

From this date to the 10th was still feverish. Occasionally slight delirium occurred by night. On two or three occasions manifested a tendency to faint, becoming pale, and with the pulse at the wrist very feeble. The urine more albuminous.

11th June.—Decidedly improved. Bruit over heart less distinct. The abnormal sound has now more the character of slight roughness with the first sound. Pulse 108.

14th.—Iodide of potassium restored in three-grain doses thrice daily. Galvanism to muscles of forearm for a few minutes daily.

18th.—Completely recovered from arthritic attack.

Ordered as follows:—

R Extracti Colchici Acetici, gr.iv.

Extracti Nucis Vomicae, gr.vj.

Ferri et Quinæ Citratis, gr.xviiij.

Extracti Gentianæ, q.s.—M.

Fiat massa in pilulas æquales duodecim dividenda; quarum sumat unam mane et vespere quotidie.

23d.—Very rapid improvement in the condition of the wrists. Can now extend the hands, though not as yet perfectly. A small blistered surface has been produced over the back of both wrists, and to it half a grain of strychnine applied a few times.

1st July.—Making rapid progress. Believes himself quite able to resume his employment, and is very anxious to do so. No longer complains of articular or muscular pains. Appetite good. Urine of higher colour, density 1·012, still very faintly coagulable. Rhythm, sounds, and action of heart normal. Pulse 74.

In this case we have the usual succession of the phenomena indicative of lead impregnation,—the attacks of colic gradually increasing in severity, then the development of the characteristic form of local paralysis, speedily followed by the epileptic seizures, which emphatically proclaim its gravity; finally, the patient, after repeatedly suffering from gout in the ball of the great toe of right foot, becomes, while under our observation, the subject of an acute arthritic attack, in which the pericardium is evidently involved.

CASE II.—J. H., æt. 37, admitted to Ward V., 8th June 1862. Has worked as a house-painter for more than nineteen years, generally mixing his own colours. For a lengthened period has suffered from pains in the belly, attended by sluggishness of the bowels. Three weeks ago these symptoms increased so much as to compel him to quit his work. Nausea and vomiting occurred about the same time. Has had no passage from the bowels for eight days. The belly is now considerably distended and hard. He suffers much pain, bending forwards and doubling himself up in the endeavour to obtain its mitigation. Has also pains, which he calls rheumatic, in the head, shoulders, and limbs. The patient states that, during the last eight or nine years he has had three distinct attacks of severe pain, attended by much swelling and redness, in the ball of the great toe of right foot. He has been accustomed for a lengthened period to drink pretty freely; and, while whisky has been his ordinary beverage, he admits that he has partaken more commonly than his fellows of both porter and ales. The gums present an unusually distinct blue line. There is no paralysis, and no muscular atrophy. He has never had any fits.

Ordered a warm bath, and thereafter to take as follows:—

R Tincturæ Opii, ℥xv.
Olei Ricini, ℥vj.
Aquæ Cinnamomi, ℥ij.—M.

Fiat haustus: statim sumendus.

9th June.—Bowels have been moved. Colicky pain, however, continues. The draught to be repeated. Has passed forty-five ounces of urine in the twenty-four hours. It is of normal colour, acid reaction, and of density 1·022, not coagulable.

10th.—Was ordered the iodide of potassium in ten-grain doses twice daily.

During the next few days the abdominal pain gradually diminished. The castor-oil was repeated daily, or on every alternate day.

16th.—Was discharged to-day at his own request, the pain in the belly having entirely ceased, but still feeling rheumatism pains. Advised to continue the use of the iodide of potassium for some time, but in smaller doses.

This case, much less severe in its nature than that of W. B., being in fact one of simple lead colic without paralysis, still illustrates equally with his the association of lead impregnation and gout, and I beg to remark in connexion with it, that in all its

particulars it may be regarded as an apt example of cases which, to the number of nearly a dozen, have fallen under my observation during the last seven years,—cases of lead colic, the sufferers from which have always complained of pains either in the limbs generally or in particular joints. Lately, I have seen a young man, J. M., house-painter by occupation, and presenting the characteristic blue gingival line, who passed, three years ago, through a very severe attack of rheumatic endo-pericarditis, specially interesting in this particular, that, although there had been much complaint of flying pains through the limbs for many weeks before the true febrile accession occurred, the inflammation first attacked the heart, and, for several days before a single joint had suffered, there were the signs of effusion into the pericardium, as well as those of implication of the mitral valve. The patient now presents the undoubted signs of mitral insufficiency, and some among the less reliable indications of an adherent pericardium.

I have already observed that it is to Dr Garrod we are indebted for pointing out the really intimate connexion which subsists between lead impregnation and gout. The curious fact had struck him, that a very large proportion, at least one in four of the gouty patients who had come under his care in University College Hospital, had at some period of their lives been affected with lead poisoning, and for the most part followed the occupations of plumbers and painters. Keeping this subject prominently before his mind since 1854, the date of his earlier observation, Dr Garrod has satisfied himself that persons following the trades referred to, are very frequently attacked with gout, much more so than other workmen in the same station of life.¹ In directing attention to this interesting inquiry, Dr Garrod has not lost sight of the bearing which other predisposing causes of gout may have in connexion with lead impregnation, and chiefly the free use of fermented liquors. I am disposed to regard the difference in this respect which exists between the workmen in the south and in Edinburgh, as of very great importance in determining the varied experience which physicians have had. Of the powerful predisposing influence exerted by fermented liquors, there cannot exist any doubt, and it is equally well ascertained that indulgence in distilled liquors does not create anything like the same proclivity to gout. In Edinburgh, whisky is the liquor ordinarily indulged in by the intemperate of the class from which our hospital patients are derived. Accordingly, while we see the injurious effects of such habits in the production of diseases of the nervous system, and specially in the frequency of delirium tremens, of hepatic, renal, and other visceral disorders; it is beyond doubt that gout is with us much less common than in the London hospitals, though, as I have already remarked, by no means so unfrequent in its occurrence as many have supposed. It will probably, I believe, be found that the association of lead im-

¹ See his Treatise on Gout, page 282.

pregnation with indulgence in fermented liquors gives a very strong predisposition to gout; and that, in the case of painters, those most subject to be injuriously affected by lead, the latter part of the required predisposition holds good, may I venture to think be true in London, for unquestionably as a class in Edinburgh they are not distinguished by sobriety. It is interesting to observe, that in the two instances of lead impregnation with gout which I have now recorded, the patients, contrary to what ordinarily obtains with us, had indulged in *fermented* drinks; both were intemperate men, one had used porter and ales alone, the other, while usually taking whisky, had consumed more of the former than his comrades. The ale and porter drinker, though the younger man, has suffered more severely from gout than the consumer of distilled liquor as well as fermented drinks; and when lead impregnation in him was established, it presented itself in a form far more serious and unequivocal than in the latter. I cannot see that the greater attention to ablution after work, which has been assigned as a reason for the Edinburgh painters suffering less frequently from lead impregnation than the like artificers in London—the former living nearer their homes in most instances and readily returning from work to meals—can adequately explain the difference which has been supposed to exist in respect to the frequency of the disorder in the two cities. In the Government works the greatest possible attention has been paid to ablution, thereby, however, nothing like immunity from lead impregnation has been attained. But, as already observed, I conceive the disorder to be of far more common occurrence in Edinburgh than has been stated.

Some very interesting observations have been made by Dr Garrod, with the view of determining the particular manner in which lead acts as a predisposing cause of gout. He has carefully examined the condition of the blood and urine of patients under the influence of the saturnine poison; and he has likewise ascertained the effect which lead, when administered medicinally, has upon the secretion of uric acid. The important results generally obtained are now well known to the profession: the blood has been found to be rich in uric acid, or at all events abnormally charged with it, while this ingredient has been correspondingly deficient in the urine. Relying on the accuracy of Dr Garrod's experiments, in neither of the cases detailed did I subject the blood to examination for uric acid, but in both it was ascertained that the amount of uric acid discharged from the system was very greatly diminished. In the case of W. B., the urine was carefully examined by Dr Murray Thomson on two occasions: the first within a day or two after the patient's admission to the Infirmary,—he was then passing upwards of four pints in the twenty-four hours, and the amount of uric acid per pint was found to be 0.56 grain. On the subsequent examination, the flow of urine having increased, and a marked improvement in the symptoms of the patient having occurred, the amount of uric acid in the pint was determined to be 1.63 grain, or nearly three times as much as on the former analysis. In the

case of the second patient, the sufferer from lead colic without paralysis, the urine was also examined by Dr Murray Thomson. The whole quantity passed in twenty-four hours being forty-five ounces, yielded 2·80 grains of uric acid. One or two other particulars in respect to the urine in these cases call for remark. In the second case, though the amount of uric acid was greatly deficient, the density of the urine was as high as 1·022, the average amount of urea being excreted. Thus we have a proof of the lead impregnation interfering with the uric-acid excreting function of the kidneys, and with it alone, as well as of the fact that the elimination of uric acid by these organs may be at fault, while the integrity of the urea excretion remains unaffected. In the case of W. B., the urine has been of low density and continues so, it is further very slightly coagulable; and although no microscopic element of importance has been detected these are untoward indications, which must affect the prognosis we now entertain, seeing that with gout a particular form of renal disorder is very intimately connected, which form is likely to show itself at an early period by just such changes in the urine as those now noted. As respects the operation of lead taken medicinally, on the system, Dr Garrod has found that by it the amount of uric acid in the urine is decidedly reduced. Reference has already been made to a case of acute rheumatism with endo-pericarditis, and resulting in valvular disease. Its subject, a young painter, was of regular and sober habits, but for some time before his severe illness had been suffering from derangement of the stomach and bowels, and from articular pains. That the partial lead impregnation by which he was affected, played a part in predisposing him to the rheumatic seizure, is, I am disposed to think, not unlikely, for I can call to remembrance two other cases in all essential particulars similar; and for several years, before, indeed, I had become aware of Dr Garrod's valuable observations and experiments, I had noticed the invariable occurrence of severe articular and muscular pains in all subjects suffering from lead impregnation, whom I had had the opportunity of seeing. The fact appears to me significant in this and other cases of the same kind, that there had been no predisposition to gout acquired by indulgence in fermented drinks; had it been otherwise, then I submit as likely that gout and not rheumatism would have been the general disorder which followed.

I conclude with a single observation in respect to treatment. In these cases, as in several others, I have employed the iodide of potassium, as originally proposed and strongly recommended by M. Melsens. The urine was very carefully tested by Dr Murray Thomson both before and after the administration of the remedy in the former case, and lead was not discovered. Granted that the kidneys are instrumental in effecting the removal of the poison, and that under the operation of such a remedy as the iodide of potassium its discharge is quickened—facts established by the observations of Dr Fletcher of Dublin,¹ and those of Drs Sieveking,

¹ Dublin Medical Press, January 1848.

Malherbe, Œltingen, and Dr Parkes,¹—still the efficiency of the cutaneous surface as the more powerful emunctory, in some cases at least, must not be lost sight of. This is probably more likely to hold true in those instances in which the warm bath has constituted a special part of treatment, and in such as, like W. B., suffer from some renal affection which may antagonize the removal of the lead by the latter channel. The employment of colchicum and iron in such cases as the former, and the judicious use of galvanism in all cases of saturnine paralysis, have much to recommend them.

2. *Chylous Urine.*

By “chylous urine” is understood urine which presents a white or milky appearance, and undergoes a more or less decided spontaneous coagulation. Other terms have been employed to distinguish it. By Dr Prout such urine was styled Chylo-Serous, by Dr Willis Oleo-Albuminous; it is the “Urine Albumino-Graisseuse et Laitieuse” of Rayer and other French writers. Of rare occurrence in our own and other temperate climates, the disorder of which it is the striking characteristic, is by no means unfrequent in certain countries, particularly in the West India Islands among the native population, in Brazil, and in the island of Mauritius. With the exception of an interesting case recorded by Dr Priestley, I am not aware of any instance of chylous urine observed of late years in Edinburgh, and during a lengthened period the example which has fallen under my own notice, is, I believe, the only one which has been seen in the Royal Infirmary.

CASE.—T. R., born on the 5th of January 1834, at Meerut in the East Indies. Arrived in Scotland in 1838, and has continued ever since to reside in this country. Since 1847 has followed the occupation of a shoemaker. Till 1850 enjoyed good health, but in that year became subject to derangement of the stomach and bowels, and began to suffer very frequently from severe headaches. Shortly after this he acquired great irregularity in his habits, taking whisky to excess, being often drunk, and in consequence much exposed to cold and wet. In 1855, had a long-continued attack of gonorrhœa, and thereafter suffered greatly from weakness in the back and limbs. After the gonorrhœa, he first observed the urine to be altered in colour, usually white in appearance, though passed without any pain or uneasiness. Such continued to be the character of the urine till June 1857, when it became much thicker, having at times the consistence of curds when it was passed. This thickness of the urine lasted for a few days together, and was again succeeded by a discharge of the white and thin urine; when the thick water was voided there was always more or less of pain, and frequently very great suffering. In June 1857, he again contracted gonorrhœa, and in the following month had an inflammation in the left eye. During this year he frequently noticed that the urine after standing a short time became quite firm. In January 1858, states that on one occasion he suffered from retention of urine for several hours, but that the attack was relieved by the passage of a dense substance very similar in size and appearance to an oyster. During 1859 and the two following years his habits have been somewhat steadier, and he has suffered less pain in the back, and only occasionally from uneasiness or difficulty in voiding urine. Came to Edinburgh in

¹ Dr Parkes on the Composition of the Urine, page 164.

December 1861 and commenced work, but owing to general weakness had soon to abandon it. It was at this time that he was seen by my friend Mr Traquair, and recommended to apply for admission to the Infirmary. The patient is short in stature, and has a somewhat sallow and unhealthy appearance. There is no emaciation, but the muscular development of body and limbs is feeble. Complaints of a nearly constant sense of weight and often of dull pain in the lumbar region. This is relieved rather than aggravated by pressure. The appetite is good, tongue clean, pulse normal, skin rather dry; suffers from thirst, and generally has confined bowels.

The patient continued under observation in the Infirmary for several weeks, during which time the appearance of the urine varied very greatly, and frequently from day to day. At one time there was scarcely more than an opalescence, at another the urine was very thick and milky, but whether slightly or highly chylous, always rendered clear upon being treated with sulphuric ether. After exposure for a short time in glass vessels, a whitish sediment, varying in amount in different specimens, but at no time very copious, was deposited. Different specimens of urine were subjected to careful chemical analysis, and, as has previously happened in similar cases, with very different results as respects the amount of fatty matters present. Dr Murray Thomson found in one sample the amount of fat per 1000 grains to be 2·075, and in another only 0·76 was discovered; both were the urines of the forenoon, passed shortly after the hospital morning meal of tea and bread. Mr Arthur Gamgee found in one specimen of very milky urine the amount of fat as high as 10·32 in 1000 parts. The following is the result of a more detailed analysis by the same gentleman; the sample of urine in this instance was by no means so chylous in appearance as that portion which rendered the former result:—

Quantity of urine passed in 24 hours,	41 ounces.
Specific gravity, 1·020; reaction, acid,	
Water in 1000 parts,	965·90
Urea,	10·15
Uric acid and vesical mucus,	1·52
Animal, extractive, and ammoniacal salts,	6·02
Albumen,	1·70
Fat,	2·00
Fixed alkaline and earthy salts,	12·71

} 34·10

On the application of heat, and on the addition of nitric acid or of nitrohydrochloric acid to this patient's urine, a very partial coagulation always occurred; the degree varied considerably in different specimens and on different days, but was never great. Microscopic examination revealed the presence of blood corpuscles, few in number, and of fatty matter in large amount, the latter always in the condition of so-called molecular division. On one or two occasions my house-physician, Dr James Grant, called attention to the presence of a very few oil globules; such were always easily produced by the previous addition to the urine of a few drops of sulphuric ether.¹ Besides these ingredients there existed a good deal of bladder epithelium, and in nearly every specimen examined a number of distinct fibres. The latter abounded in such urine as after standing for a short time exhibited small coagula, sometimes coloured pink, at other times colourless; consisting of the spontaneously coagulable ingredient in chylous urine, namely, fibrine. Casts of the renal tubules were never found. Only on one occasion while the patient was under our observation did the urine acquire, after standing a couple of hours, in part the consistence of "blancmanger."

In the case of this patient, as of others previously described by different observers, the chylous condition of the urine could be

¹ Simon found oil globules in chylous urine, but the observation has hitherto scarcely been confirmed. See "The Microscope in Medicine," by Dr Lionel Beale, page 314.

readily increased or diminished at will. Rest operated very strongly in determining a diminution of the fat and albumen, while a brisk walk, or even moving about in the ward, on the other hand, as powerfully increased both. The patient maintained that stimulants lessened the milky appearance of the urine, but, with the exception of a limited allowance of gin, under which the urine was for several days clearer, we determined that they really increased it. Many remedies were administered, but with very little benefit. Gallic acid, which Dr Bence Jones has found most useful, failed to effect any change; the salts of iron seemed more serviceable, particularly the persesqui-nitrate. A proper regulation of diet I consider to be of most consequence; for although an increase of the chylous condition of the urine was observable after partaking of all kinds of food, and after every meal, even when rest had been previously indulged in for a considerable time, yet the use of such articles of diet as caused a feeling of indigestion, speedily and seriously increased the morbid state of the urine.

In this patient's case there is no reason to apprehend the existence of organic renal disease, such as occurred in the instance recorded by Dr Priestley.¹

The affection is undoubtedly an obscure one. This much may be considered as ascertained, that in all cases of chylous urine, occurring of course to a much greater extent in some than in others, the abnormal constituents of that fluid, the fatty matter, the albumen,² and fibrine with blood globules, when they occur, are diverted from their proper channel and being removed at the kidneys—whether owing to change in the lymphatics of these organs, or in their capillaries, is not known—prevent the due nutrition of the system, to which they are properly subservient. The debility and cachectic appearance soon manifested by some sufferers, and the look of indifferent health which before long all more or less acquire, confirm this view. Dr Prout³ has in our own country had by far the largest experience of this peculiar disorder, and by him and Dr Bence Jones⁴ the subject has been carefully investigated. On the Continent, the most extended inquiry regarding it has been made by M. Rayer.⁵ From time to time individual cases are being placed on record; of one such a very interesting and detailed account has lately been given by Dr Beale.⁶ I may mention that the patient whose case I have related is at present engaged in his old occupation, and is freer from pain and inconvenience than for some time past.

¹ Edinburgh Medical Journal, 1856, p. 945, and Medical Times and Gazette, April 18, 1857.

² Probably in the condition of the Peptone of Lehmann or Albuminose of Mialhe.—(See Parkes on the Urine, p. 300.)

³ On Stomach and Renal Diseases, fourth edition, p. 116.

⁴ Medico-Chirurgical Transactions, 1850, and Philosophical Transactions of London, vol. cxi., p. 651.

⁵ Traits des Maladies des Reins, vol. iii. Hæmorrhagies Rénales Essentielles (endémique), p. 373.

⁶ Archives of Medicine, vol. i., p. 10.

ARTICLE III.—*Report of some of the Cases in the Clinical Surgical Wards of the Royal Infirmary of Edinburgh, during June and July.* By THOMAS ANNANDALE, M.R.C.S. (Eng.).

Large Tumour of the Scalp.

CASE 41.—E. L., æt. 50, admitted 1st April 1862. Thirty years ago, a small lump, the size of a pea, formed on the occipital portion of the scalp, and very slowly increased in size until one year ago, when it was as large as a small orange. At this time the skin over the summit of the tumour ulcerated, and a red fungous mass protruded, which has rapidly enlarged.

On admission, there was a movable tumour over the occiput the size of a large orange, with a fungous protrusion on its summit; the glands of the neck were not affected.

6th.—The tumour was removed by a circular incision, a healthy margin of the scalp being taken away along with it. On examining the tumour removed, it was found to consist of two portions; its base and central part being white and fibrous in structure, but its summit and external portion were soft, and the microscope showed the presence of cancer cells.

19th.—The wound is slowly healing.

8th June.—Dismissed to-day, the wound being healed except at one small point.

Remarks.—This case forms an excellent example of the degeneration of a simple tumour. There can be no doubt that for many years this growth was perfectly harmless in its nature, but that at last a malignant action commenced and rapidly spread, and would soon have destroyed the patient if the disease had not been removed.

Disease of the Articulation of the Cervical Vertebrae.

CASE 42.—G. G., æt. 43, admitted 26th March 1862. Four months ago, the patient began to suffer from severe pain in the back of the neck; this pain was worse at night, and commenced over the upper cervical vertebrae, shooting from thence up towards the head and downwards towards the right shoulder; it has increased very much in severity during the last few weeks, and has caused the neck to become stiff, preventing him moving his head without the assistance of his hands.

On admission, there was some swelling at the upper part of the neck over the spinous processes of the first two or three cervical vertebrae; the head was kept fixed in one position, and when the patient required to move it, his hands were always raised to assist.

3d April.—The actual cautery was freely applied over the spinous processes of the upper cervical vertebrae.

7th.—The pain has quite left the part.

14th.—The patient dismissed cured, being quite relieved from his pain, and being able to move the head in all directions without difficulty.

Remarks.—This case is only one example of the successful results which are constantly occurring here from the application of the actual cautery, in a certain class of diseases of the articular surfaces of the joints.

Schirrus of the Male Breast.

CASE 43.—R. A., æt. 68, applied here for advice on the 5th of May 1862. He first noticed the disease four months ago; it was then the size of a small bean and has since been getting rapidly larger. The patient has occasional stinging pain in the tumour.

On examination, there was a tumour the size of a five-shilling piece in the left breast; it was hard to the touch and firmly adherent to the surrounding tissues; at its summit there was a small point of ulceration. The glands in the axilla being affected, operative interference was declined.

Remarks.—This tumour exactly resembled the schirrus which affects the female breast, but was of more rapid growth than is usually met with there.

Bursal Swelling over Knee-Joint, containing bloody fluid.

CASE 44.—E. H., æt. 23, miner, admitted 5th June 1862. Three weeks ago, the patient fell and injured the right knee; a swelling formed immediately after over the patella, which gave him no pain, but has gradually increased in size. He had no swelling there before he fell, although he kneels a great deal when following his employment.

On admission, there was a tumour over the patella, which exactly resembled in appearance the ordinary bursal swelling which occurs in this situation.

5th June.—To-day, the tumour was tapped, and a quantity of bloody fluid drawn off, resembling the fluid of an hæmatocele. A drachm and a half of tincture of iodine was injected.

30th.—Since last date the swelling has been very slowly diminishing.

Remarks.—I am not aware that this variety of bursal tumour has been previously described. Its similarity to an hæmatocele of the tunica vaginalis is very striking; for in both cases we have a closed cavity lined by a serous membrane, which, after being exposed to some external injury, is found to contain a bloody fluid.

Hæmatocele.

CASE 45.—W. B., æt. 52, admitted 30th June 1862. For the last twenty years the patient has had a large swelling on the right

side of the scrotum, which a medical man assured him was a hydrocele. It remained without giving him any trouble until one week ago, when he severely bruised the part while riding on horseback. The day after, the whole scrotum was much swelled, and he was therefore advised to come here. On admission, one week after the injury, there was a tumour the size of a child's head on the right side of the scrotum. Fluctuation could be detected at some points of it, but at other parts it felt quite solid.

6th.—To-day, an incision was made into the upper part of the swelling, in order to ascertain its nature; and, on finding it to be, as was supposed, an hæmatocele, the cavity of the tunica vaginalis was freely laid open, and the clots removed. It was found that this cavity was divided into several cysts, some containing bloody fluid, others the ordinary straw-coloured serum of a hydrocele. The testicle lay at the lower part of the cavity perfectly sound. Some lint was then placed in the wound.

20th.—The lint removed, suppuration being well established.

2d July.—The wound is contracting rapidly, and the whole swelling is much diminished.

Remarks.—This variety of hæmatocele is, I believe, quite unique. Although in hæmatocele of the tunica vaginalis the amount of fluid and coagulated blood varies in different cases, I am not aware that both clear and bloody fluid have been found contained in separate cysts in the same tunica vaginalis.

Popliteal Aneurism.

CASE 46.—J. C., æt. 38, navy, admitted 3d April 1862. The patient, a strong, healthy man, states that three or four weeks ago, he began to feel the right leg weak and painful, especially round the knee-joint. He also at this time discovered that there was a small tumour in the popliteal space, which pulsated strongly. He is not aware of having injured the limb in any way.

On admission, there was an aneurism of the right popliteal artery, which completely filled the popliteal space. It pulsated strongly, and had a distinct bruit. The patient suffers great pain in the tumour, which is worse during the night, and the whole limb below the knee is swollen and oedematous.

4th June.—Since admission, the patient has been kept quiet in bed, but with no relief to the symptoms. Mr Syme therefore tied the femoral artery at the apex of Scarpa's triangle, with the effect of immediately staying all pulsation in the tumour.

13th.—The external portion of the incision has healed by the first intention; but unfortunately the ligature has disappeared and become buried in the wound.

17th.—A small abscess has formed over the wound, which to-day opened and discharged a small quantity of pus.

25th.—The ligature came away through the opening of the

abscess. The tumour in the ham is decreasing in size and becoming more solid.

8th July.—The tumour is rapidly diminishing in size, and the patient is now going about again.

Remarks.—There can be no doubt that ligature of the femoral artery, if carefully performed, is the safest and most efficient method of curing popliteal aneurism, and it is now likely to be one of the few arteries in which the Hunterian operation is to be preferred.

Lithotomy.

CASE 47.—J. K., æt. 66, admitted 13th June 1862. The patient has suffered from symptoms of stone in the bladder for four years, which have been gradually getting worse.

On admission, the patient was sounded, and the presence of more than one stone in the bladder was detected.

18th June.—To-day, the lateral operation of lithotomy was performed, and two large stones removed.

21st.—The tube taken out.

30th.—The patient is progressing most favourably.

9th July.—The wound is contracting, and the patient continuing to go on well.

Remarks.—There is nothing remarkable about this case, but I have mentioned it for the purpose of calling attention to a circumstance occasionally following the operation of lithotomy, which has not been much noticed. It is the occurrence of hæmorrhage within ten days after the operation, which comes on suddenly, and generally soon stops of its own accord, and, therefore, though alarming at the time, requires no special treatment. It appears to come from the neck of the bladder or prostate, and does not interfere with the successful progress of the case. I saw a gentleman lately, who was attacked by this hæmorrhage on the fifth day after the operation; he lost about ten ounces of blood at the time, and, when I visited him shortly after, it had ceased, but there was complete retention of urine, and the bladder was distended and felt hard to the touch. This was evidently owing to blood having escaped into its cavity and coagulated there. No treatment was adopted, the urine began to flow again in a few hours, and next day, a large clot the size of two fists was expelled by the wound. After this the patient was entirely relieved, and has continued to improve ever since.

Excision of the greater part of the Upper Jaw.

CASE 48.—E. S., æt. 43, admitted 24th June 1862. Eighteen months ago, the patient first noticed a swelling over the hard palate on the left side. This gradually increased in size until three months ago, when it began to grow more rapidly, and to implicate the surrounding tissues.

On admission, a tumour of soft consistence occupied the position of the hard palate on the left side; it had also involved the greater

part of the palate on the right side, and had spread to the inner side of the left cheek and gum; the whole of the front teeth in the upper jaw were loose; the left nostril was obstructed, but there was no expansion of the bones at the root of the nose.

2d July.—To-day, Mr Syme made an incision from the inner angle of the left eye, down the side of the nose into the mouth, the flap being dissected off, so as to expose the tumour; the left upper jaw, together with the greater portion of the right, was removed by means of the cutting-pliers. Thus the whole of the disease was effectually taken away. No artery required ligature.

9th.—All the stitches removed. The wound has healed by the first intention, and the patient is progressing most favourably.

Malignant Tumour of Bone.

CASE 49.—E. B., æt. 34, admitted 25th April 1862. One year ago, the patient twisted her left leg severely. Shortly after, a small tumour, the size of a pea, formed on the outer side of the upper end of the fibula. Since then it has rapidly increased in size.

On admission, there was a tumour as large as a child's head on the outer side of the left leg. It appeared to spring from the upper third of the fibula, and was soft and elastic to the touch. The glands were not affected. Amputation of the limb was proposed to the patient, but she declined, and left the hospital at her own desire.

CASE 50.—R. O., æt. 12, admitted 2d June 1862, with a large medullary tumour on the outer side of the arm, a little below the shoulder. It was of very rapid growth, and had increased very much during the last few months.

On admission, there was a tumour the size of two fists on the outer side of the upper third of the arm, connected with the bone. Amputation through the shoulder-joint was the only treatment that could be adopted, but this the father of the boy would not consent to. He was therefore dismissed at his own request.

ARTICLE IV.—*Mollities Ossium in Insanity.* By W. CARMICHAEL M'INTOSH, M.D., Assistant-Physician and Superintendent, Murray's Royal Asylum, Perth.

THE occurrence of mollities ossium, malacosteon, or osteomalacia in asylums seems to be rare, although several cases are mentioned in connexion with more or less evident mental disease. Mr Solly¹ gives the case of C. S., æt. 29, a young woman whose health declined after an attack of scarlet fever at the age of 19. "Two years afterwards, from a slight cause, the clavicle was fractured, and never again united. After another accident of a more trivial nature, she became nervous and desponding, and her friends remarked a

¹ Med.-Chirurg. Trans., 1844.

great difference in her manner; her disposition seemed changed from an open and amiable temper to one of restlessness and suspicion. They became fearful that she was going out of her mind. After exposure to damp, she had an attack of acute rheumatism. She complained of great pain over the posterior part of the head, and was occasionally violently delirious. At the approach of convalescence, mania set in, and during its existence she attempted to commit suicide." Mr Solby connects the state of the cranial bones, which were found extensively diseased, with the mental affection, and contrasts the case with that of another patient mentioned in the same paper, in whom absence of the disease from the bones of the skull co-existed with entire mental faculties. Curling's¹ patient, æt. 72, had been subject to hysterical fits before admission into the hospital. In Litzmann's² "Contributions," six cases are enumerated (4 women and 2 men) where "the disease evidently became developed in consequence of profound lesions of the central organs of the nervous system. One of the patients had suffered for years from insanity, another from chronic hydrocephalus, which was produced by a fall on the head at two years of age; the other 4 were of weak intellects, and of these 2 had continued convulsions in early childhood." In the same paper another well-marked case is mentioned of a woman, aged 22, "who became ill in consequence of a profound affection of the mind, and died nine months afterwards; the bones only of the lower extremities and of the pelvis were affected."

Within the short interval of about six months, two examples of the disease occurred in the Perth Asylum, in the case of two women, both of whom had been for a long time resident in the establishment; my attention was accordingly directed to the subject, mainly with a view to discover whether the peculiar circumstances connected with asylum life have not a tendency to engender this disease, or whether the morbid condition may not simply be dependent upon the generally diseased condition of the system. Moreover, there is at present under treatment a male patient, formerly a weaver, who has a distinct double curvature of the spinal column, antero-posterior and to the left, most marked in the middle dorsal region, and who constantly complains of great pains in the bones of his legs, and lately had his ribs fractured from a slight fall; all which symptoms, taken in connexion with his general appearance and the duration of his malady, point somewhat in the same direction. He has a peculiar crouching gait, and often walks in a limping fashion, averring that his leg is broken. His urine is somewhat pale; sp. gr. 1015; phosphates are scanty; there are a few crystals of uric acid; no albumen; no sugar. His blood presents a healthy aspect, coagulates firmly, and microscopically shows a normal relation of white to red corpuseles, which are natural in

¹ Med.-Chirurg. Trans., 1836.

² Translated by Dr M. Duncan, pp. 28 and 29.

appearance. He is subject to repeatedly recurring attacks of corneitis and conjunctivitis.

The two cases, which I shall shortly narrate, presented certain features of similarity in their earlier symptoms. Both occurred in females past the middle period of life, each of whom had been the subject at one time of suicidal melancholia, the disease, in fact, retaining certain of its characteristics to the last. One, the eldest, however, had partly lapsed into that dementia so often consecutive to the graver mental maladies; the other was active-minded and despairing throughout. Both were unmarried and had followed sedentary lives. One became insane at the comparatively early age of 22; the other when advanced in life, namely, at the age of 56. Each had spent a period of about ten years in the Institution since last admission; and both were hopeless cases of mental disease.

When first admitted into the Asylum, the younger of the two was 22 years old, and had then been five weeks insane. She suffered from melancholia, and had made more than one attempt to commit suicide. She asserted that she was driven to do so in consequence of her sins, which had been so great as to preclude her from any chance of salvation. Her treatment consisted of purgatives, alteratives, and the shower-bath. Shortly after admission, she attempted to set fire to her dress while the attendant was putting on fuel; she had gloves applied to prevent further mischief. She also refused food, and complained of an uneasy sensation in the head; on account of the latter symptom she was leeches and cupped. Though generally ill-tempered and quarrelsome, she recovered in a great measure after eight months' treatment, and was dismissed.

Twenty-two months afterwards, she was again admitted in a worse state than before, having made several attempts at suicide, the last with a penknife, with which she cut herself severely at the bend of the elbow. She endeavoured to starve herself, and required frequent use of the stomach-pump; while unwearied patience and vigilance were demanded of attendants, as she dashed herself on the floor and furniture, and attempted to throw herself down stairs. In short, she presented a complete example of an irresistible impulse to self-destruction. Nineteen months after admission, however, she was sent out cured.

The third admission was for a period of three months, about three years after the former illness, and her case had not altered. She refused food and medicine, and required artificial alimentation. In a few weeks she took her food voluntarily, and conducted herself with propriety. Another five years spent at home amidst her family (during which she swallowed many pins and needles), ended in a fourth admission, and during this stay (a space of more than two months), the features of her case, hygienic and moral, were the same as they had been on the previous occasions. A fifth and last time she was sent here on account of her unbearable temper

and disposition. Silent and retiring, she took little notice of surrounding events, and kept aloof from all society. About four years afterwards, she complained of cardiac pain and debility, and was confined to bed, obstinately, however, refusing stimulants. Two years after this, her case changed for the worse, as she became violent, vituperative, and quarrelsome, and attempted to strangle herself with her pocket-handkerchief. Shortly after this outburst, she refused to walk in the grounds on account of weakness in her limbs, and never again left the building. Formerly she was stout and florid, now she had become attenuated and anæmic. Her bodily ailments were slight, consisting of nervous palpitation, headaches, and dyspepsia. It is a curious circumstance that for many years before her death she refused animal food, and generally took her meals standing. For two years before her fatal illness, she walked about holding her ears, as if hearing gave pain, and this is interesting in connexion with the state of the temporal bones.

About ten years after her last admission, she became still weaker and more anæmic, and in January last complained of severe pains in her limbs, and inability to progress, and frequently screamed out if they were interfered with. Abstemious and vegetarian as before, it was only with great pressing that she took a little arrowroot and wine. Her circulation was feeble, and her attenuated limbs quite livid, but nothing peculiar was detected in the extremities at this time. She rallied in a few weeks, and went about as usual till the beginning of May, when increasing feebleness and prostration again obliged her to remain in bed. The pains in her arms, clavicles, and legs, were excessive, and she frequently told me they were broken or dislocated, yet no such lesion was discoverable on careful examination, though the superior extremities usually hung in a half-powerless condition. Abscesses formed at the root of the neck, exposing the clavicular origin of the sterno-cleido-mastoid, and contained greenish unhealthy pus. Acute tuberculosis now set in, and she sank in about three weeks. Her urine before death was loaded with crystals of the triple phosphate, but was not albuminous.

Such having been the history, I found at the post-mortem examination a peculiar dark red appearance of the frontal, sphenoid, parietal, and occipital bones at the base of the cranium, which led me to examine them more minutely. On slight pressure, the forceps sank into the body of the sphenoid, and from the wounds there spirted a brownish oily fluid. The petrous portion of the temporal bone, usually so dense and resisting, was in the same condition, for the bone-forceps indented it with ease, causing the same oily fluid to exude. On opening the chest, the sternum and ribs were characteristically affected; the former could be quite readily doubled up, while a very slight force caused the ribs to yield and break in any direction. The form of the chest, after removal of the sternum and thoracic contents, was diagnostic, for, instead of the ribs forming a resisting and elastic arch, the sternal ends

fell towards the vertebral column by several inches. By putting one hand on the inner surface of the ribs and the other on the outer, a whole series of the bones could be broken at once. In sawing the vertebral arches, to lay bare the spinal cord, the instrument sank through the bones without much effort, the same dark oily fluid exuding. The bodies of the vertebræ were in a like condition. On cutting down to the femur in the popliteal space, I found that, on perforating the abnormally softened bone, the reddish-brown oily fluid welled out in abundance. Lest the entire bone might not be in a similar condition, another incision bared the centre of its shaft anteriorly, when the state of matters was not different, allowing, of course, for the denser nature of the bone at that part. The humerus was affected both in its shaft and head, and likewise the clavicle. In all these bones she had, as before-mentioned, felt great pain.

The general results of the post-mortem examination were included in the last annual report of the Institution (1861, p. 39, et seq.), but I may note them here more minutely for the sake of coherence and comparison. The brain was quite healthy, the only points worthy of note being the larger size of the right hemisphere posteriorly, both as regards depth and prolongation backwards, and the presence of some polypoid granulations on the choroid plexus of each lateral ventricle. The heart was small and firm, and its valves competent. While washing the right ventricle, I was surprised to see a rounded white body floating out. Further examination showed a great number of whitish-yellow isolated masses, which lodged in the pits between the columnæ carneæ, especially towards the apex. They varied from the size of a small pea to that of a field-bean. They proved to be cysts, and contained a yellowish fluid resembling pus; but the microscope showed no pus-cells proper, only granular matter, oil-globules, and yellowish or brownish colouring matter. They appeared to be degenerated fibrinous clots. These were described as "so-called cardiac polypi" in the annual report, but they were the "purulent cysts" of Dr Stokes and others. The patient's chest had been frequently examined during life; and the only abnormal heart sound detected was a running together of the first and second sounds from want of a sufficient pause. In connexion with the diseased state of the osseous system as well as that of the lungs, for both lungs were tubercular, this state of the heart illustrates the following remark of Dr Stokes:—"It is found that, in certain cases which are examples of acute or chronic disease of organs and structures often remote from the heart, the cavities of this organ present cysts, as it were entangled in its fleshy columns, and exhibiting various degrees of adhesion to its walls."¹ The connexion between the mollities ossium and the cysts seems to be somewhat obscure, but it is worthy of note that the latter likewise contained fatty globules in their interior. Both lungs were freckled with miliary tubercles, ex-

¹ Stokes on the Heart, p. 119.

hibited pleuritic adhesions (the right being everywhere adherent), and in the apex of the left was a cavity containing a grumous fluid, marked externally by an old cicatrix. Some authors consider that the cardiac cysts are somehow connected with the pyogenic state, and Forget found that the confinement of the disease to the left ventricle in his case was coincident with the limitation of tubercular ulcerations to the left lung. Stokes mentions other cases in which disease of both lungs accompanied cysts in both cavities.

The liver was enlarged, pale, and fatty. A needle was found in the pancreas, and two in the omentum, about an inch and a half from the transverse sweep of the colon. They had evidently pierced the gut here, as the colon had two dark discolorations, corresponding with the situation of the needles. The latter, though eroded, retained as much of their original nature as to show head, shaft, and point. The kidneys were pale and fatty, with the cortical substance diminished, and marked off from the medullary by a dark red line. The legs had been dropsical for some time before death, but the urine was not albuminous at the periods when it was examined.

In this, as in most other cases recorded, the patient was past the middle period of life, and of the sex most usually attacked. She was of slight build and nervous diathesis, and by no means predisposed by constitution to fatty degeneration; indeed, her subcutaneous textures were devoid of adipose matter. She suffered great pain before death from the state of her osseous system, though this was then referred to rheumatic origin, and her wailings always finished with the same desire, viz., that she might speedily be liberated by death. Her power of moving the arms and legs was throughout greatly diminished, though this might partly have arisen from pain. There was no morbid craving for a particular kind of food; on the contrary, the appetite was rather feeble, and there was a tendency to abstinence. The exclusion of animal food from her diet was voluntary, and for many years before her death she must have been nearly a pure vegetarian.

The interior of most of the bones being filled with a fatty and histolytic mass of a deep reddish colour, the skeleton, and with it the locomotive organs, must have depended solely on the exterior of the bone for support and leverage,—a support, it may be remarked, of the most inadequate kind; and had she been subjected to the vicissitudes of ordinary life, instead of being carefully superintended in a quiet and level gallery, I have no doubt that the condition of the bones would have been diagnosed long before her death by the occurrence of one or more fractures. The disease in this case must have been of slow growth; for the pains she complained of in her limbs, and her inability to walk round the grounds four years before her death, make it probable that the malady had then made considerable progress. As might be supposed, and as has generally been found, the less dense interior, beginning with the medullary membrane

and medulla in the long bones, and the cancellated portion or diplœe in the flat and irregular bones, became affected first. In all the specimens of bones examined, the exterior was more or less deteriorated and soft, as well as abnormally dark. If she had lived longer, it is not unlikely that the osseous framework would have been transformed into mere fibrous cylinders or sacs, enclosing an oleaginous substance.

With regard to the connexion of this dyscrasia with the cerebral affection, it is possible that the same state of the system which produced the one might produce the other, but no appreciable alteration in the structure of the brain-substance was discoverable either by the scalpel or the microscope.

The other case occurred likewise in a female affected with melancholia, which had lapsed into dementia. Her mental disease was stated to have arisen from fright and bad health, at the age of fifty-six. She was treated with alteratives, purgatives, opiates, and generous diet, and in about three months left the asylum cured. She was again, however, admitted in about three months, labouring under the same delusions, declaring that her head was quite "empty," and that she was "nobody." A tendency to suicide was also observed. She was mentally dull and torpid, dirty and degraded in her habits. She sometimes refused food for a meal or two, but never to such an extent as to necessitate artificial feeding. She evinced great disinclination on all occasions to enter a bath. For more than a year she had been unusually torpid and disinclined for exercise, especially that of going up stairs. Up to a month before her death, she took exercise in the airing court, and occasionally made one of walking parties beyond the barrier. Her torpidity and disinclination to exert herself was generally attributed to laziness. About this time she complained much of severe pain in the region of the hip-joints, and screamed out if hurried in walking. When her chest was examined, she complained of the pressure of the stethoscope. Latterly, she could not progress any distance without getting on her hands and knees, and generally remained quietly on her seat. She beseeched every one to let her alone, persisting at the same time that she was "nobody" and "nothing." Her tongue was foul, and her breath very offensive; she had gentle laxatives and alteratives, with suitable stimulation. The former caused her great pain, so much so, that she almost refused to take wine or porter lest they should contain medicine. She sank rapidly, delirium with tossing of the arms supervening some hours before death.

Of the post-mortem examination I shall first narrate those points connected with the morbid condition of the osseous system, together with the microscopic anatomy of certain of the bones, and then state briefly other points of interest in the case.

The bones of the cranium presented no signs of mollities ossium. On examining the fluid of the lateral ventricles and cavity of the skull two days after the sectio, I found its surface coated with beautiful

crystals of the triple phosphate, while the field generally presented a granular aspect, with blood-corpuscles and oil-globules dispersed here and there. This is a circumstance of importance in the pathology of the disease, the usual channel for the elimination of excessive phosphates being the urine. While opening the chest, the ribs yielded and broke on the slightest interference, the fractured surfaces giving out a thin fatty fluid of a dark red colour. The chest also assumed that flattened form mentioned in the previous case. Many ribs had more or less developed callus portions, showing that lesion of the bony walls had occurred on former occasions. Other ribs had lost most of their osseous characters for a considerable distance, and were mere bands of a fibrous substance, like wet leather. The costal cartilages were much denser and stronger than these portions, and the mechanism of respiration must have been greatly interfered with. The difference between the osseous portions and the normal state of the bones was well marked. The smooth, firm, and elastic nature of the healthy rib is well known. The ribs in question were greasy, rough, and readily bent or broken in any direction, frequently splitting at the groove in their inferior border. The outer table of the bone could easily be pushed with the thumb into the cancellous portions, or at least into where that ought to have been, for in most parts it was totally gone; its place being supplied by the fatty fluid, which readily welled out at any aperture. The costal cartilages were, in the best marked cases, altered in structure, and running laterally without interruption to a much greater extent than usual, or rather the osseous arch had also become quite degenerated in its neighbourhood, rendering the line of demarcation indistinct. When the periosteum was peeled off the edge of the degenerating bone next the softened portions, the surface was seen to be pitted with numerous large apertures, as if the osseous texture around the canals of the nutrient vessels had been the first to give way. On making a section of the portions next the costal cartilages, the incision could be carried back—even through what seemed osseous substance, so thin were the tables and so scanty the earthy matter. Isolated portions of bone mixed with the fibrous stroma, marked the gradual dissolution of the texture. Microscopically, this part presented an interesting appearance, since in the sections many small osseous nodules of degenerating bone were included. The general field was fibro-cellular, the cells being of various shapes and sizes, nucleated and often elliptical. Amongst these and the fibres were various granules and globules of oil, and, indeed, the fatty element was in great abundance,—the globules floating here and there and coalescing with one another as they met. The osseous portions were conspicuous on account of their different refracting power and structure.

Most authorities agree that the bones affected with this disease have their lacunæ enlarged. The microscopic appearance of the isolated nodules and scales of bone from the softened and fibrous

regions of the ribs was interesting. Scarcely a normal lacuna could be seen, all bearing resemblance to such being altered and rounded, with only a trace of short canaliculi. These canaliculi had disappeared altogether for some portion, as the bone cell though widened could not have obliterated nearly so much. From these specimens, it would seem that the change of structure takes place, not in the bone lacunæ only, nor in the surrounding matrix only, but in both,—a fact supported by other evidence, since the whole surrounding texture is altered in such well-marked examples, and presents dark markings and a dingy granular aspect where no lacunæ ever existed. In such portions the structure is remarkable, for the field is covered with irregular dark streaks, often of large size, which are apparently cavities filled with oil. One may observe various stages in the formation of these darkened portions:—1st, The lacuna nearly of its normal form with long canaliculi; 2d, The rounded or irregular lacuna with very short canaliculi; 3d, The latter meeting with one or several of its neighbours in a like condition forms irregular islands, each connected to the other at first by a narrow isthmus, and finally merging into extensive darkened masses. But all this seems to be favoured by the altered molecular state of the surrounding matrix, which the disappearance of part of the canaliculi with other things plainly shows to be changed. The figures given by Mr Dalrymple,¹ of bone-corpuscles altered by mollities ossium, appear to me only to be intermediate forms, though characteristic enough, the more advanced condition being seen in the irregular dark masses formed by the running together of several, as observed in the isolated nodules and scales from the soft or fibrous parts. It would not seem to be necessary for the destruction of the bone that such extreme changes of the lacunæ should ensue; but the fact of the surrounding matrix being disintegrated, likewise accounts for those cases in which the bone disappears—its canaliculi having advanced no further than the stage of shortening, and the form of the lacuna only large and rounded.

A careful microscopic investigation of various parts of these ribs showed that the lacunæ in the diseased external tables were on the whole of a wider form, sometimes were circular; and this occurs especially at the disintegrating margins. Away from the softened portions, the lacunæ and canaliculi at the exterior of the bone were little altered; but it must be remembered that the disease was only progressing, and judging from the aspect of those in the isolated portions above-mentioned, the enlargement would seem to be a mere matter of time.² Further, in a longitudinal section of some of the

¹ Dublin Med. Trans., vol. ii.

² In preparing a section of the bone for microscopic purposes, we are apt to remove that surface most affected by the disease in grinding, and thus show its effects in a modified form. Thin plates, however, occasionally occurred in the interior or cancellated portion, which were so attenuated as to permit their subjection to the microscope without further alteration.

diseased bones close to the softened margin, the disintegration appeared to attack certain portions of the bones sooner than others, causing longitudinal streaks, whereof the lacunæ and canaliculi of the denser and more normal portions to a great extent resembled healthy bone, while the other portions showed wider and diseased lacunæ. It might be observed that the Haversian canals most frequently traversed the latter portions. The margins of the apertures on the surface of the ribs near the softened portions, which gave entrance to processes of periosteum, had a rugged granular aspect, and molecular disintegration seemed at work there with especial vigour.

The interior of the bone differed as widely as possible from that of a normal one. In an ordinary rib, the central portion is filled up by a complete network of bone, enclosing certain soft matters. If we attempt to take a portion of the latter for microscopic examination, the knife is constantly interrupted by the bony structure, and the little soft material that is got, generally contains fragments of the broken-up cancellated texture. It presents innumerable nucleated cells, generally of a circular form, and varying in size, occasionally some minute needle-shaped crystals, a few blood-discs, granular matter, and a moderate amount of oil-globules, which do not tend to run together, and seldom form large masses. This description applies to a rib kept under the same circumstances as those in the case of mollities, viz., cut from the fresh subject and preserved in spirit. In the bone afflicted with mollities the state of matters is altered; for, on introducing the blade of the forceps, or other such body, at a transverse section of a rib, it could be pushed into the interior without meeting any osseous obstruction. When the outer table was removed, or a section of the bone made, its interior presented a mass of soft matter which could easily be pulled out, leaving a sharp and slender process of bone here and there to break the smooth bony tunnel. Many of these well merited the name of "threads" given to them by Dalrymple. Most of the enclosed soft material spirted out in the fresh bone, but after immersion in spirits, it became more consistent. The microscopic aspect of the bone contents showed a much greater amount of granular matter than in the healthy bone, irregularity in the shape of the nucleated cells, which sometimes were elongated, numerous blood-corpuscles, and an enormous preponderance of fatty masses and globules. At the tougher portions, a considerable amount of fibrous texture was likewise present.

The ribs were also interesting in having certain callus formations, the result of frequent fractures. One was especially diagnostic, since only the anterior table of the bone had given way, leaving the pleural surface entire. On raising the outer table at this part, a tough fibrous provisional callus filled the whole interior of the bone for fully half an inch on each side of the depression. It was arranged in layers like bands of muscle. The callus formed at

certain parts seemed quite in accordance with the formation of such in a healthy person, only the dense or parietal portion of the bone was thinned, though sometimes forming the strongest part of these weak bones. In other cases degeneration had followed, and softened pulp obliterated the callus internally, before the outer portion had become sufficiently consolidated. The microscopic examination of the callus portions showed the usual structure, with the addition of an enormous quantity of fatty particles.

The prolongation of a tough and somewhat resisting fibrous band from the costal cartilages seemed to be a special provision of nature for the safety—functional and organic—of the thoracic contents.

The other bones affected were the bodies and arches of the vertebrae,—cervical, dorsal, and lumbar. The sacrum and adjoining portions of the ossa innominata were much softened; and it will be remembered that she complained of constant pain in those parts, aggravated by walking. I cut down on the head of the humerus, the distal end of the radius, the hip-joint, and the lower end of the femur, but in none of these did there appear to be mollities.

As regards the other pathological appearances, it may be briefly stated that the brain was quite healthy, with the exception of a small fibrous tumour, about the size of a pea, on the choroid plexus of each lateral ventricle; heart, soft and fatty; liver, enlarged, fatty, and dotted with numerous dense fibrous masses of a circular form. Oesophagus inflamed throughout almost its entire length (she had much difficulty and pain in swallowing for some days before death). The capsules of the kidneys adherent, and their texture fatty, containing in the pelves casts with abundant oil-globules. The right kidney was most affected, its cones and cortical substance being nearly indistinguishable, except at the lower end. The omentum and abdominal textures generally contained much fat, as also did the subcutaneous tissues throughout. There was a fibrous tumour as large as a hen's egg in the left mamma, and several smaller ones of the same nature in the fundus and cervix of the uterus. There was only a trace of atheroma at the bifurcation of the aorta.

The leading features of the two foregoing cases were the following:—Both patients laboured under a depressing mental affection, and one superadded the exhaustion of partial—sometimes complete—abstinence. Both complained of great pain in the bones affected, had fatty disease of the kidneys, and a morbid condition of the liver. In the one, abundant crystals of the triple phosphate were found in the urine; in the other, no urine could be collected either before or after death, but the crystals were numerous in the fluids of the encephalon. In the younger the frame was emaciated in the extreme, and the lungs very tubercular; in the other, there was abundance of adipose matter and no tubercles.

The exact origin of the malady in the two foregoing cases is not very apparent, though both show certain features which have been stated as causes. The sedentary life under the depressing mental

infirmity, and the confinement, however modified, continued over a series of years, give us strongly marked elements of the causation generally stated. I do not think that asylum life produced the disease, but certainly it would aggravate the tendency. The abstinence of the younger seems to have especially favoured the progress of the malady.

ARTICLE V.—*Case of Abdominal Aneurism.* By GEORGE GRANVILLE BANTOCK, M.D., late Resident Surgeon, Royal Maternity Hospital, Edinburgh.

W. H., æt. 26, a printer, of somewhat sallow complexion, yet evidently well nourished, first came under my care on the 24th February 1862. Patient stated that he had always enjoyed good health till about twelve months ago, when he suffered from pain in the loins, with dyspeptic symptoms,—the urine depositing an abundant sediment. After about three weeks' treatment, the pain completely disappeared, the dyspeptic symptoms were removed, the urine became clear, and he returned to his wonted state of good health. From that time he continued well till a few days before consulting me.

On 24th February, his symptoms were as follows:—There was pain in the lumbar muscles, increased by firm pressure and walking; no tenderness of the spine. The appetite was bad; he complained of flatulence and some uneasiness after taking food; the bowels were rather constipated; the tongue was irregularly furred; his urine deposited a large quantity of amorphous urates. There were no cardiac or pulmonary symptoms. He was gloomy and reserved, and his symptoms and the details of his history were elicited with some difficulty. Under the use of ten-grain doses of bicarbonate of potash thrice daily the urates disappeared in a few days; while the lumbar pain was much relieved, although it was subject to occasional aggravation. On the 1st of March, I prescribed, for the relief of the lumbar pain and remaining dyspeptic symptoms, five drops of hydrochloric acid, and half a drachm of tincture of *actæa racemosa*, to be taken in an ounce of water three times a-day after meals.

On the 6th March, he was very much improved. As there was still constipation, he was ordered *colocynth* and *hyoscyamus* pills. This was his last visit to me; and on the 13th, in reply to a question put by a friend, he expressed himself as being quite well.

On the morning of the 16th March, I received a hurried message to visit my former patient, who, it was said, "was taken worse in the night." On the previous evening, while engaged in his usual employment, he was seized with pain in the back, attended with nausea; and, returning home earlier than customary, he spent the remainder of the evening in reading, the pain having much dimin-

ished. During the night he was rather restless, and did not sleep well. When I saw him he was in bed, suffering from severe pain in the lumbar region, increased by pressure over the muscles, the pain extending forwards into the hypogastric region; there was no tenderness of the spine either on pressure or motion; he complained of a feeling of numbness in the legs, yet sensibility and power of motion were complete; the feet were rather cold. The tongue was furred, and dry at the extreme tip; there was thirst, no appetite, and constipation, bowels not having been relieved for two days, although he had taken colocynth and hyoscyamus pills on the two preceding nights. He had passed during the night about twenty ounces of urine, of a dark amber colour, with a mucous cloud. No cardiac, pulmonary, or cerebral symptoms; pulse 80, of good strength; skin moist. On palpation, nothing abnormal could be detected in the abdomen. Acting under the impression that he was suffering from oxaluria, for which I afterwards made a microscopical examination of the urine, but without success, I inserted three needles into the lumbar muscles, to be removed in about three quarters of an hour, and prescribed the following:—*R* Acid Nitro-Mur. dil. ζ ii.; *Tr.* Gentianæ, ζ ss.; *Aquæ* ad ζ vi.; *Sig.* An ounce three times a-day.

At 6.30 P.M., his father called, requesting me to pay my visit before darkness came on, in order that I might see the matters vomited and passed by stool. I found that within about a quarter of an hour after the first dose of the medicine he had vomited, and that diarrhoea had come on almost simultaneously, and so severe, that, up to the period of my visit, his bowels had been moved upwards of a dozen times. The vomited matters were of an olive-green colour, apparently consisting of biliary matter acted upon by acids; and the evacuations by stool, after the first few, which were fecal, consisted of blood and mucus. Latterly, they were not copious,—about 2 fluid ounces at a time. Patient was now much paler than at my former visit, and had to be assisted out of bed. Since the removal of the needles the lumbar pain had almost disappeared. There was no abdominal pain, but a feeling of “hardness” around the umbilicus, and a sensation of “soreness” in the rectum and anus. Pulse 80, weak; thirst. Has eaten since the morning only a small piece of toasted bread. He stated that about twelve months ago he had been “ruptured,” that he had since worn a truss, and asked whether his present complaint could depend on that. On examination there was no trace of rupture. Administered a small dose of the mixture, and prescribed five-grain doses of gallic acid every two hours.

At 9.30 P.M., I was again summoned, and found the patient dead. He had vomited once in the interval, and had had three bloody but scanty stools; he had passed no urine since my first visit in the morning. A few minutes before my arrival, after drinking some lemonade, and conversing with a friend, and while the latter was engaged in rubbing his legs, his lips were seen to “quiver,” his

face suddenly turned "deadly pale," and in a few seconds life was extinct.

A post-mortem examination was made 32 hours after death, in the presence of Mr Dobie, sen., and Dr W. M. Dobie.—Body well nourished; post-mortem rigidity well marked; slight sugillation of dependent parts of trunk; greenish discoloration in both iliac regions; no abnormal dulness of abdomen on percussion, and no tumour perceptible.

Thorax.—Lungs healthy; pericardium contained about $1\frac{1}{2}$ drachm of amber-coloured fluid; slight, recent, and easily broken down adhesion of the serous surfaces at the root of the large vessels existed in front. The heart was flabby, rather pale on section, yet firm, and there was no abnormal amount of external fatty deposit; the right ventricle contained a firm white clot (about 3 inches in length, and 2 lines in greatest thickness, and about a quarter of an inch wide), which extended into the pulmonary artery; the left ventricle contained a flattened oval clot (about 2 inches long by $1\frac{1}{4}$ wide), white on the upper, and bloody on the under surface; all the valves quite healthy; thoracic aorta also healthy. The blood obtained from the last-mentioned clot presented, on microscopical examination, a large excess of colourless corpuscles.

Abdomen.—The peritoneal cavity contained about a pint and a half of sero-sanguinolent fluid. On drawing the small intestines from the left side, a black swelling was seen to extend downwards to the brim of the pelvis, gradually tapering to this point, bounded internally, as far as then seen, by the median line, and having a white band running along the centre of its (anterior) surface. This was found to be a large coagulum, bound down by the peritoneum, and separating the folds of the mesocolon. Tracing it upwards, it was found to extend as high as the diaphragm, where, with some difficulty, its source was ascertained to be an opening—as large as a half-crown piece—into an aneurism of the abdominal aorta, arising from the vessel immediately on its entering the abdominal cavity, and above the origin of the cœliac axis. Occupying the orifice was a firm plug, continuous with the external coagulum and contents of the sac. The amount of effused blood, which I had no means of accurately determining, I estimated at between 2 and 3 lbs. The coagulum closely enveloped the left kidney and pancreas. The sac was as large as a medium-sized cocoa-nut, and of an oval form,—its long diameter in the direction of the vessel. On removing the contents—a firm, partly decolorised clot, presenting a somewhat stratified appearance—the fingers came in contact with the rough hollowed out bodies of the last dorsal and two first lumbar vertebræ; the intervertebral cartilages being entire, and presenting very prominent ridges. The absorption was on the left anterior aspect. The posterior wall of the aneurism was thus formed by the vertebral column, and this rendered unsuccessful an attempt to remove the sac for preparation. The proper wall of the sac was formed of con-

denser fibrous tissue, between 2 and 3 lines thick; the interior was very rough; the edges of the orifice were ragged and everted; the aorta entered the sac on the right side, and the left wall of the vessel terminated abruptly, and by a prominent edge, which acted like a valve when an attempt was made to pass the finger into the aorta above, until its presence was ascertained by passing the finger along the aorta into the sac. The other vessels were not examined, as time and circumstances did not permit. The peritoneal surface of the posterior aspect of the stomach was much ecchymosed, as were also those parts of the intestines that overlaid the coagulum. About 4 feet from the caput cœcum coli there was an intussusception of the small intestine of about 3 inches, and another about 2 feet higher up, involving upwards of 6 inches of the gut. No adhesion had taken place between the opposing serous surfaces, and the normal relation of parts was readily restored. The sigmoid flexure, which formed the band already spoken of, was compressed into this form between the blood and peritoneum. The structure of the intestinal canal was normal, except at the parts affected by the invaginations. The left kidney was evidently enlarged and congested; the right was not so much so. Spleen small, and its capsule corrugated. Liver healthy; the gall-bladder contained about an ounce of bile. Bladder empty and contracted. No evidence of hernia was observed.

Brain and spinal cord not examined.

Remarks.—The diagnosis of abdominal aneurism is allowed to be very difficult in many, perhaps the majority of cases, and the preceding furnishes another example in which that condition escaped detection; and seeing that it presented some symptoms which are regarded as warranting a strong suspicion of its existence, it may not be unprofitable to advert to them.

The prominent symptom, then, on which I can now look back as resulting from and indicating it, is the severe pain in the lumbar region; and since the death of my patient I have met with a record of two cases observed by Dr D. R. Haldane, and published in the *Edinburgh Medical Journal* for October 1858, in both of which neuralgic symptoms were prominent. The same author makes reference to a similar case by Dr Beatty, recorded in the *Dublin Hospital Reports*, vol. v. A previous acquaintance with these cases might, by arousing my suspicions, and by a consequent special examination for aneurism, have enabled me to diagnose the disease; but this only amounts to possibility, for in one of the cases above referred to, a most careful examination for aneurism yielded a negative result. Is the absence of pulsation to be accounted for by the mode of entrance of the aorta into the sac as described?

It will be observed in the details of the case, that the first symptoms of the disease began about twelve months before its fatal termination. The pain then experienced seemed to be sufficiently

accounted for by the derangement of the urinary secretion, and especially as—according to the patient's statement—in the course of about three weeks the pain left him, with the disappearance of the very copious urinary sediment. The repetition of similar symptoms on the 24th, induced me to attribute his complaints to the same conditions; and the result seemed to justify my diagnosis, as, by the administration of an alkali, the deposit of urates disappeared in a few days; and with this his lumbar pain was almost removed. Yet there were the occasional aggravations to be accounted for; and although, on the occasion of his last visit, I made a careful examination, I now regret not having employed the stethoscope.

Whether the injury which the patient alleged he had sustained had any connexion with the aneurism as its cause, it is impossible now to ascertain. Owing to his great reserve, I was unable to determine positively the nature and extent of the hernial protrusion, further than that he consulted a surgeon, who advised him to wear a truss. There was no external indication of rupture, and no part of the intestinal canal or viscera occupied the canal or sac, if such had existed.

I have since ascertained that the patient frequently complained of pain in the back, of short duration. This is contrary to the statement he made to me.

As to the immediate cause of death, it would seem pretty evident that this was due to the sudden twisting of the aneurism; for it is hard to imagine that so serious a lesion, as the rupture of the sac, with the effusion of such a large quantity of blood, should not be attended or marked by some special symptoms, such as fainting, or a sudden and temporary aggravation of pain, or convulsions. The previous loss of blood by stool would of necessity favour the immediately fatal effects of such an effusion.

The intussusceptions had no doubt been produced during the last minutes of life, and had exerted no influence upon the progress of the case.

CHESTER.

ARTICLE VI.—*A Case of Idiopathic Gangrenous Stomatitis.* By
A. LEITH ADAMS, M.B., Surgeon, 22d Regiment.

O. A., aged five years, a soldier's child, was admitted into the Regimental Female Hospital at Poona, in India, on the 9th August. The parents lived in a well-ventilated apartment, in an airy situation, and the mother stated that the child had not suffered from illness or exanthematous disease since his birth. Moreover, that he had always been strong and healthy, with a ruddy complexion, until about eight days previous to admission, when his countenance suddenly became pale, and from having been sprightly, he turned silent and indifferent to all around him. In a few days his left

cheek began to swell, and steadily increased in size up to the day of admission, when, in addition to considerable tumefaction, several small superficial ulcers were observed on the gums of that side. The whole surface of the body was very pallid, and the skin hot and dry. The swelling increased daily, and ulceration extended to the mucous membrane of the cheek, which was slightly flushed, and felt hard and tense. Astringent gargles and solutions of nitrate of silver were applied to the mucous surface. On the 19th of August, three molars from the lower jaw came away, and a small livid patch appeared close to the left ala of the nose; the left cheek was very much swollen, and had now a glazed appearance, the tumefaction extending to the opposite side of the face and the eyelids, which were closed in consequence. The saliva kept constantly trickling from the edges of his mouth, and his breath was most offensive. Wine and beef-tea were given freely, and powdered charcoal applied externally. The symptoms gradually increased, and, on the 21st, mortification rapidly spread across the left cheek to the angle of the lower jaw. Turpentine liniment and charcoal were freely applied. On the 24th, the slough commenced to separate, and, on the 26th, the whole of the nose and cheek came away in one foetid slough, disclosing a frightful looking chasm, with the teeth loose in their denuded sockets. The child continued taciturn to the last, and never made a murmur of complaint. He seemed to experience no pain, and was conscious to within a few hours of death, which took place on the twentieth day after admission, and the twenty-eighth day of the disease.

Remarks.—The above appears to me of some interest, by affording an example of this most formidable variety of cancrum oris, occurring without any apparent cause in a well-nourished and remarkably healthy child. The case occurred during the humid monsoon months, when zymotic and monorganic diseases are very prevalent and fatal.

Part Second.

REVIEWS.

Psychological Inquiries: Part Second. By Sir BENJAMIN BRODIE, Bart. Pp. 247. London: Longman, Green, Longman, and Roberts: 1862.

THE very high professional reputation which the author of this little volume has so long and so deservedly maintained is certain to secure for it the respectful attention both of his own brethren

and of the thoughtful and inquiring portion of the reading public. And while we confess to some feeling of disappointment, in the fragmentary and incomplete tone of the Essays, we feel happy to say, there is much in them that is able and suggestive, and well calculated to repay a careful perusal. Extreme moderation and admirable good sense are their characteristic merits. And even the unsatisfactory feeling we have mentioned with which we leave off some of the discussions which these pages contain, may proceed from the wise reluctance of the author to come to a final decision on points which are not yet ready for it, and does, in fact, indicate a mind not only trained to the scrupulous weighing of evidence, but to the honest resolution to abstain from expressing a positive opinion either where the facts are not fully ascertained, or where the matter in question lies beyond the range of our faculties.

The form into which Sir Benjamin has chosen to cast his book—that of dialogue—we do not think a happy one. It tends, we think, to increase the feeling of indefiniteness and uncertainty we have alluded to, by breaking unnecessarily the continuity of thought, and gives, moreover, an appearance of unreality to an argument, besides suggesting that, as both sides of a question are the emanations of one and the same mind, the side which the author favours is exhibited in its strongest light, and the other with corresponding feebleness. This, however, is a matter of taste; and there is no doubt that in whatever way or form Sir Benjamin Brodie chooses to present his opinions, the weight of his authority demands that he should be deferentially listened to.

The first dialogue contains remarks on the comparative value of physical and psychological inquiries. It is full of sound sense, and exhibits the author's strong conviction of the value of the old maxim, "*Medio tutissimus ibis*:" there are no extreme opinions. But it does not go very deep—it does not elucidate first principles; and while the interlocutors express their conviction of ordinary and recognised opinions respecting moral science and physical inquiries, we certainly do not feel that our own previous views have received any great accession of strength, either from the novelty of their arguments, or from any peculiar felicity of illustration. And we miss, not only here, but throughout the book, what we think would have added greatly to its interest, any special reference to our own professional studies, or any of those illustrations of psychological phenomena which the ample stores of Sir Benjamin's experience must have supplied him with. A little greater expansion of his views, and greater exactness in defining his terms, would have made Sir Benjamin's remarks more valuable. He does justice, we are glad to say, to the importance of psychological studies, though he does by no means sufficiently advert to their value as a means of disciplining and developing our faculties as a branch of mental gymnastics; and some of his observations leave it a little doubtful whether he would not exclude some of what may be called the legitimate results of psychological inquiries

from our consideration, as well as those subtleties and obscure mysteries, which he condemns as useless objects of speculation. Again, it would have been well had Sir Benjamin, in speaking of the usefulness of hypothesis as applied to certain branches of physical inquiry, explained the characters of such an hypothesis as may be rationally employed,—which we take to be, first, that the principle assumed be not inconsistent with any known or established fact; and, next, that it should fulfil its purpose as an explanation of otherwise unaccountable phenomena, without the necessity of having recourse to still further supplementary assumptions.

Proceeding to the three following dialogues, we find the same character prevailing as we have already indicated. There is no lack of sensible observation, and an abundance of sound, judicious maxims; but these are not traced to their foundations, either in ultimate principles of belief, or to facts resting either on these, or on a scientific basis; nor are they prosecuted so far and so fully as they advantageously might have been; nor is the connexion between the different subjects introduced at all so close or so clear, as to make their relations either readily perceived or easily remembered. In reference to the connexion between physical health and intellectual exertion, Sir Benjamin seems to think that all that can be said is, that to make the most of our mental powers, it is essential to preserve the health in the highest possible state of integrity. Sound advice, certainly, but somewhat trite, and which many an earnest student would be deeply indebted to Sir Benjamin to tell him *how* to accomplish. We refer to the passage for the sake of remarking how very little importance Sir Benjamin has assigned throughout his little volume to all purely physiological views in elucidating points connected with moral science, or the improvement of the mind; indeed, except where he hazards a conjecture (and that, by the way, not very doubtfully expressed), that insanity depends on some morbid change in the circulating blood, he almost ignores them altogether. Still, he admits that, both in the organs of sense and in the nervous centres themselves, it is highly probable that certain organic changes do take place coincident with the continuous application of our faculties to any given subject, and that molecular changes occur in the nervous substance consentaneously with not only our bodily movements, but with our emotions and desires;—what these may be he appears to think it vain to inquire. It may be so; but it is rather a disheartening conclusion. Assuredly the subject is a very interesting one; and it appears to us that Sir Benjamin's own medical investigations have tended somewhat, if not to elucidate the various steps and stages in the process, at least to establish the fact that changes in the nervous substance, and ultimately changes of a more permanent character, in other tissues of the body, may and do take place under the influence of constantly recurring states of feeling or emotion. We ourselves have at this moment in our eye various cases of partial or irregular

hypochondriasis, in which the constant searching for certain symptoms, and the morbid eagerness to discover certain feelings and appearances of disease, seem to have realized the imaginary fears of the patient, and to have developed organic disease in some important part, generally the liver. As to insanity, too, cases are not few where not only every experienced medical man, but every sagacious observer in ordinary life, must have remarked unrestrained eccentricity, or uncontrolled temper, passing into confirmed aberration of mind. These remarks are perhaps not immediately illustrative of the point Sir Benjamin adverts to, but they are not very remotely connected with it; for both psychology and physiology have been beholden in their progress to illustrations drawn from the phenomena of disease or the records of morbid anatomy. They give additional emphasis also to Sir Benjamin's remarks on the great importance of self-control, and the power of the will, in influencing and regulating both our intellectual processes and our moral feelings. Now, there can be no doubt that this power of the will acts through the faculty (whether it be a simple or a complex one) of attention. We cannot, at our pleasure, call up love or hate or any other feeling, or compel ourselves to reason correctly, or to remember accurately; but we *can* acquire such a power over ourselves as to attend closely and persistently to circumstances of whatever character, which are by the laws of our nature inevitably associated with certain moral sentiments as well as with the power of memory; and to withdraw our mind from brooding on those which as certainly are associated with selfish or malevolent impulses. And this power over the attention and through it over the affections and sentiments, both serves to explain to a certain extent, at least, the ability we have to improve the memory, and justifies Baron Alderson's caustic reply to the defence of "uncontrollable impulse" set up for a person whom he tried, "if the criminal had an uncontrollable impulse to commit the act, the law has an equally uncontrollable impulse to punish him for doing it."

The character of the chapters we have thus hastily glanced at is certainly somewhat fragmentary, and if not loose, the nexus between the different parts of them is feeble and not very easily perceived. The remaining Dialogues, at least the fifth and sixth, are in our opinion of a much higher character, and express very calmly, and with great caution, and therefore all the more impressively, the views of a very thoughtful, reflective, and highly educated man on several very important subjects. Sir Benjamin's remarks on education are full of sense and judgment, and characterized by his usual temperance and moderation. While admitting and explaining very clearly the important benefits that are derived from the study of the inductive sciences, he particularly specifies physiology, and especially recommends its cultivation in the latter part of the time devoted to education. He dwells with great emphasis on the necessity of the study of language, especially the languages of Greece and Rome, as fitted

to store the mind with noble thoughts and generous sentiments, to elevate the taste, by presenting to it the grandest and purest models; and still more, to invigorate the mental powers, by the attention necessary to master even its driest and most elementary details.

But the advantages of linguistic studies do not end here. Language is the necessary instrument of thought, and it is the exponent of our thinking powers themselves. If we can think at all, we cannot think accurately, or consequentially, without words, and we cannot gain a knowledge of the faculties and operations of our own minds, without a reflex consideration of the light thrown back upon them, by the forms of articulate language, into which they are naturally cast; further, without a knowledge of the philosophy of language, the foundation of which must be laid in early life, we cannot take a step in tracing the early history of our race, and the whole subject of ethnology must be abandoned. But, alas! all these considerations, so plain that they scarcely require to be stated, seem to be *ultra crepidam* to the Royal College of Surgeons of England, whose recent conduct in the matter of education, besides its insulting defiance of authority, seems to us the most astounding instance of obstructive retrogression ever exhibited by any body claiming to represent a liberal and enlightened profession. If the medical profession is to keep its ground in public estimation, it must advance *pari passu* with the educated portion of the community, and be able to wield its special acquirements so as to make them available in those discussions which involve the general well-being and progress of society. All that is demanded is, that the education medical men receive should be such as to fit them for this end. How highly qualified our author is to take a part and a leading part in discussing such questions,—how carefully he has thought upon them, and how calmly and judiciously he has announced his conclusions,—which are not in a single instance pushed beyond what the facts of the case warrant, the essay we are considering amply proves. It is certainly most undesirable, that the profession of which he has long been so distinguished an ornament should become incapable of estimating such a man, or should be converted into so ragged a band that such a leader would be ashamed “to march through Coventry” with them. That this will be the effect of the regulations regarding education of the College of Surgeons of England, at least immediately, we by no means affirm, but it is the result which such legislation does certainly *tend* to bring about. Dugald Stewart talked of certain corporations which served at least to show, by their stationary position, the rate of progress in the advancing tide of knowledge and civilisation, by indicating the distance to which its waves had flowed on beyond them. Heaven forbid that such should ever be the destiny of our profession. We conjure our author to give the weight of his name and the influence of his authority to discourage the issue of such rescripts as that to which we have been adverting.

The sixth Dialogue is quite equal in ability and interest to the one we have been considering; it treats of natural theology and the recent speculations of Mr Darwin, with which it deals with admirable judgment and fairness. We promised ourselves much pleasure in analyzing and discussing it, but our space is exhausted, and we can only recommend it earnestly to the attention of our readers. To the eminent author himself, we offer the assurance of our high respect and best wishes for the prolongation of his long and honourable career,—“Sero veniat in cœlum.”



The Influence of Tropical Climates in producing the Acute Endemic Diseases of Europeans; including Practical Observations on the Nature and Treatment of their Chronic Sequelæ, under the Influence of the Climate of Europe. By Sir JAMES RANALD MARTIN, C.B., F.R.S., Physician to the Council of India, etc., etc. Second edition. Pp. 778. London: Churchill: 1861.

THE government of no nation in the world has such an interest in providing for the health of its soldiers as the British. With an army small in proportion to the extent of its possessions; recruited, often with difficulty, by a system of voluntary enlistment; exposed to every variety of climate, from the rigours of a Canadian winter to the scorching summer of the plains of India; it might well have been expected that the military authorities of this country would have spared no pains to render the arrangements for promoting the health of its troops as perfect as possible. This, however, is far from having been the case: in no civilized country has the military medical service been so systematically depressed as in our own. Whilst the profuse liberality of a grateful nation is showered upon those who successfully lead its armies into action, the slightest encouragement is doled out with a rigorous parsimony to those to whom the health and physical well-being of those armies is supposed to be intrusted. We say supposed to be intrusted, for, as a general rule, British commanders have refused to listen to, or have entirely disregarded, the counsels of the only competent advisers on sanitary points.¹ As might have been expected, this neglect has

¹ Sir Ranald Martin speaks as follows from his own experience:—"When very young, and serving in one of the most pestilential countries known in India, I made a topographic examination of the localities, and reported the result to my commanding officer, suggesting at the same time what I regarded as the most suitable arrangement for encamping the men against the coming rainy season, when it was well known that a great increase of deadly fever would result. The answer was, 'I'll be — if I do.' Now, here was no blundering lieutenant, but, on the contrary, one of the most able and well-informed field-officers I have ever known; yet, such was his treatment of a grave matter of duty, and the neglect of which, before the year was over, cost him his life. Again, on landing at Rangoon, during the first Burmese war, I was credibly informed that the superintending surgeon of the Bengal division

been visited upon the army and upon the country. The terrible disaster of the expedition to Walcheren, which cost the country the lives of ten thousand brave soldiers, and a loss of twenty millions of money, was the result of an ignorance and wrong-headedness of which we have had almost equally scandalous instances in our own day. John Bull is habitually forbearing, and it is only now and then, as during a Crimean campaign, that the feelings of the country are thoroughly roused, and that an appearance, at least, of reformation is forced upon the authorities. By quartering troops in unhealthy localities, and improperly constructed or too crowded barracks; by moving them about at unsuitable seasons of the year; by following a routine and exploded system as to dietary and clothing; and by neglecting to provide the men with pursuits which shall wean them from demoralizing and debilitating habits; a loss of life is annually incurred, which, though to a great extent avoidable, has come to be regarded as a matter of course. "Sir A. Tulloch has stated to me," says Sir Ranald Martin, "as the result of his investigations in the War-Office, that amongst British officers and soldiers of the Queen's and Company's armies serving in the East Indies alone, there occurred, from 1815 to 1855 inclusive, exclusive of casualties, a total mortality of about one hundred thousand men, 'the greater portion of whose lives might have been saved, had better localities been selected for military occupation in that country.' Estimating each soldier at the minimum value of £100, we here arrive at a loss in money of £10,000,000."

We should be glad to see, on the part of the authorities, signs of a real desire to elevate the position, and thereby to increase the influence, of the military surgeon; but the signs hitherto have been very faint, and some of the additional privileges, extorted with difficulty, have already been withdrawn. It must be confessed that the Duke of Wellington did not exhibit that care for the health of his troops which should be evinced by a great commander; and that during the many years of peace, when he was all but omnipotent in military affairs, he did little or nothing to promote the material wellbeing of our soldiers, or to raise the position of the army-surgeon. Subsequent generals, trained in that school, have too often adopted the weaknesses of their great model. Napoleon had a truer appreciation of the importance of attending to the health of his troops, and of the honour due to those to whom the care of it was committed. The comforts of the soldiers in the hospitals in the French armies were carefully and sedulously provided for; due attention was paid to the representations of the medical inspectors in selecting sites for encampment; and the Marshals of the Empire thought it no disgrace to be associated in the highest grades

there had warned the officer commanding that, without fresh animal food and vegetables, the European soldiers must perish from scurvy. The answer was characteristic, and somewhat more civil than that granted to me. It was this: 'Medical opinions are very good, sir—when they are called for.'

of the Legion of Honour with such men as Larrey, Desgenettes, and Percy, who, in military circles in this country, would have been sneered at as little better than civilians. A better time for the soldier, and for the army-surgeon, must inevitably arrive, and the latter may confidently appeal to such a work as that now before us, in order to show how well qualified he is to undertake the duties of his important charge.

The work of Sir Ranald Martin has already been for several years before the profession, and the call, in little more than five years, for a second edition of so elaborate a work, is satisfactory proof that it has been duly appreciated. A full knowledge of the literature of his subject, a long residence in our Eastern possessions, and an experience of the results of tropical diseases extended and matured by years of practice in this country, are qualifications possessed by Sir Ranald, and which fall to the lot of few. Our own limits prevent us from doing more than expressing in general terms our high opinion of its value, and giving a most imperfect outline of its contents.

The work comprehends four parts, treating respectively of climate and medical statistics; the prevention of disease; acute tropical diseases and their cure; and chronic diseases of Europeans on their return from India, and their cure.

Passing over the first part, which contains important meteorological, geological, and statistical details, we have a few observations to make regarding the chapter on the prevention of disease.

The doctrine of the prevention of disease is founded upon a knowledge of the laws of health, and the principles of etiology. There can be no question that even among the medical profession the fact of the importance of this department has only lately been fully realized. Important in every branch of practice, it is nowhere of such clamant necessity as in the case of armies in the field. Disease, it is well-known, kills far more than the sword, and setting humanity altogether aside, every life saved or every death prevented, is a material gain to the country. While we fully admit that the importance of hygienic measures is only now becoming thoroughly understood by army-surgeons, it must be borne in mind that they have all along been immeasurably ahead of the military authorities. Official redtapeism, and unreasoning adherence to routine, have perpetuated abuses which only required, one would have supposed, to be pointed out in order to be removed. The leather stock, or "dog collar," condemned by Larrey half a century ago, has been handed down to our own time, and we have read with indignation of soldiers marching in India under a burning sun with empurpled faces, forbidden to remove their strangulator, and falling out of their ranks to drop down senseless, or to die. We are all aware of the importance of fresh provisions, especially in a hot climate; with what patience can we listen to the assurance of a statesman in Parliament, that in the West Indies "while the soldiers, who were

unstained by crime, were condemned to five days' salt provisions weekly, the convicts were allowed five days' fresh meat; and while the troops were suffering, the convicts were in good health." Scurvy has been banished from the navy, why should scorbutic dysentery, the scourge of our armies, be not equally consigned to the realms of the past.

One cause, perhaps the principal one, of the great mortality of our troops in hot climates, has been the selecting of sites for barracks in low and unhealthy situations. In almost all of our colonial possessions, elevated situations may be found at no great distance in which the health of the troops may be maintained nearly as well as in our own country. One example of what may be effected in this way by a judicious and energetic governor, we quote from Sir R. Martin,—

"The removal of the British troops from the pestilential plains to the healthy mountain regions of Jamaica was at length ordered by a man who united the most active and enlarged benevolence to the most invincible firmness and resolution in carrying out every measure that was right—Lord Metcalfe. And, strange to say, the result has been to the very letter as Jackson foretold; the British soldiery now retaining their health in the mountains 'nearly as well as could be expected in their native country.'

"The result as regards the mortality of British troops is, in simple figures, as follows:—From 1803 to 1816, and for how long before we do not know, the soldiers perished in Jamaica at the rate of 130 per thousand per annum, while by the simple and easily arranged measure ordered by Lord Metcalfe, the mortality has, since 1842, been reduced to 35 per thousand per annum.

"This beneficent act, so becoming the generous and noble nature of the governor of Jamaica, was 'characteristic of Metcalfe. He made the first movement on his own responsibility, and offered himself to pay the expense. He saw that the troops under his command were being sacrificed to ignorance, negligence, and false economy; and he exerted himself, not without success, to establish a new order of things, by locating on the high healthy grounds of the island the European regiments which perished miserably on the plains.'"

This question has attained a still greater degree of importance in India since the disbanding of a large portion of the native army, and the consequent necessity for an increased number of British troops. But the lives of our men are in the hands of the authorities, and on their decision, whether they will listen to reason or persist in a system of routine, depends in all probability the persistence of our empire in the East. The subject has even a wider bearing than its connexion with the health of our armies; within the last few years we have had too many examples of the effect of a deleterious climate combined with unceasing mental exertion; we have seen two governors-general return with shattered health to their native country only to die; we have seen our first financiers go out full of health to the East, and in a few months die at their post, or return home with broken health; and the question is naturally asked, why should Calcutta remain the seat of government?¹ There are plenty of localities among the Himalayas where

¹ A correspondent of "The Times," writing on the 19th June, says, in reference to the lamented death of Lord Canning, "A thatched cottage in these mountains, with its hedges of the white rose and scarlet geranium, its magnificent pines,

the bodily energies may be maintained even during the hot season, by the pure atmosphere and the cooling breezes; while the climate of Calcutta is one of the worst in India, and may be best described by a few quotations:—

“The hot and dry season in Bengal extends from the beginning of March to the middle of June, during which the winds are steady and strong from south and south-west. The temperature rises gradually from 80° to about 90°—95° in the shade, and reaches to 100°—120°—130° and upwards in the open air. Notwithstanding the high temperature, this season is rendered far less oppressive to the feelings than might be supposed, by means of the moisture carried along with the monsoon in its passage over the Bay of Bengal, and likewise by the frequency of refreshing storms, accompanied by rain, lightning, and thunder. Of Calcutta at midday, in April, May, and part of June, it may be said, however, with truth, that it is ‘a city of stone, in a land of iron, with a sky of brass;’ the soil of the surrounding country being ‘rent and riven as if baked over a volcano,’ often emitting noxious vapours.”

“From the 15th July to 15th October, and as the rains advance, we live in an atmosphere having all the properties of a tainted vapour-bath; and when the wind comes sifting through the Soonderbunds at south-east, we experience many of the inconveniences ascribed by Hennen to the sirocco of the Mediterranean, which, ‘*without affecting the thermometer or barometer in any remarkable degree,*’ yet inflicts on the delicately sensitive human frame a feeling of indescribable languor and oppression, with an exhausting perspiration, much like what we suffer from in Bengal during the latter portion of the rainy season, and which a West Indian lady, speaking of the sirocco, described as giving ‘*the feel as if she had been bathing in a boiler of syrup;*’ while a Bishop of Calcutta said that in the rainy season he felt ‘*like a boiled cabbage.*’”

At least our readers will say, there is still the cool season to recruit our system and restore our energies. But hear Sir Ranald Martin: “Even during the cold weather, from the end of October to the beginning of February, an European cannot be exposed for any length of time with impunity; the hot sun and cold parching

its morning view of the snowy range, with its pretty English women and rosy children, with English birds singing in the woods,—is it not a happier summer home than the steam bath of Calcutta, where all Europeans look pale and ghastly, talk of cholera, small-pox, and dysentery, as habitually as in England we look to the glass for wet weather, and where our ablest statesmen die an early death? Wilson, Ritchie, and Lord Canning are dead; Mr Laing is ill; Mr Beadon has been indisposed; Colonel Baird Smith is dead; Lady Canning is dead; Lady Wills is dead; Lord and Lady Dalhousie are dead; Lord Auckland and Sir Henry Hardinge lived at Simla, afterwards enjoying life, when, after a thousand cares, they returned home; Sir George Clerk still lives; Lord Gough, Lord Clyde, and now Sir Hugh Rose, all have passed summers in Simla. Sir John Lawrence and Sir Henry Lawrence habitually lived on the hills; and the writer of these lines is alive, only because, whenever he might, he took a holiday on those much-loved mountains.”

wind, with its evening and morning rawness, causing the most uncomfortable feelings of external dryness and internal fulness, unless it be in persons of youth and robust health, and under exercise sufficient to determine moisture to the surface." And again,—“People, on coming into Lower Bengal from the Upper Provinces during the cold season, perceive an extraordinary change in the condition of the atmosphere on first approaching the Delta of the Ganges; the bracing elastic cold of Upper India is exchanged for that of a damp cellar, and thus they invariably describe it.”

The question of selecting a more healthy situation for the seat of government is one of national importance, and there seems no reason why Simla, or some other of the hill sanatoria, should not be chosen to supersede Calcutta.

We shall quote Sir Ranald's opinion of the use of tobacco in hot climates,—

“There is another habit respecting which I shall venture to say a few words, because it is both a bad one and a comparatively new one—I mean the immoderate use of tobacco—a habit brought amongst us from the continent of Europe, on the cessation of the French revolutionary war. Young military men are apt to regard the habit as a manly one, until severe dyspepsia, giddiness, shat-tered nerves, sallow complexion, disturbed action of the heart, and other symptoms show themselves, and then it is frequently too late to stop. ‘The sallow complexions, black, broken, and unsound teeth’ of the Germans are matters of notoriety to all travellers. ‘You may,’ says one of them, ‘smell a German in any part of the room, or scent him at a quarter of a mile’s distance in the open air, if the wind be favourable.’

“Much is talked of the good effects of tobacco-smoking in damp and malarious localities, by persons who, in defiance of geographical differences, carry the habit wherever they go—from the marshes of Burmah to the arid plains of Hindustan, forgetting that, meanwhile, in the language of Cassio, “they put an enemy in their mouths to steal away their brains;” but I think there is good reason to question the benefits of this habit of smoking even in the fatherland of fog and damp, or that tobacco ever acts as a preventive to any disease, and least of all to fever.

“The truth is, that many persons puff themselves into the good graces of snobs and spoonies like themselves, and use cigars by the score now, as Lord Chesterfield drank and smoked in his time, notwithstanding his aversion to wine and tobacco—“because he thought such practices very *genteel*, and made him look like a man.” How his lordship may have looked under the united influence of wine and tobacco, his biographers have failed to relate; but we all know how our modern “spoonies” and “snobs” in our thoroughfares look, after a course of cigar-smoking alone.”

In the third part of the work which treats of acute tropical climates, Sir Ranald Martin describes the various forms of fever; coup-de-soleil; dysentery; diseases of the liver; congestion of the spleen; cholera; and delirium tremens. Without entering specially into the disputed subject of the alleged change of type, Sir Ranald seems to believe that a certain change has taken place in the diseases of India; that especially since the outbreak of cholera in 1817, not only has that disease undergone changes implying a progressively greater depression of the nervous functions, but that the endemic diseases of the country, such as fever and dysenteries, have become

gradually and imperceptibly less and less sthenic in their nature, and that the complications of these diseases have become less inflammatory and more congestive. Still Sir Ranald Martin recommends general blood-letting in the early stage of most of the acute diseases we have mentioned, in the case, at least, of persons who have not been debilitated by a too long residence in hot climates, and other causes. In speaking of the remittent fever of Bengal, he observes,—“Tropical fever, dysentery, and hepatitis are produced by the action of specific causes, and such diseases are nowhere cured by the exclusive use of blood-letting and purging, as in the instance of common or sthenic inflammations. Yet here, as in dysentery and hepatitis, bleeding is generally the standard remedy, subject to considerations of age, constitution, and length of residence in India. In acute hepatitis it is a necessity, if we would save the life of the sufferer. Bleeding, whether general or local, should in remittent fever be practised to the extent of reducing the force and frequency of the pulse, and of relieving the loaded and oppressed abdominal viscera. It precedes all other means of cure, both in order of time and in importance.”

The fourth part of Sir Ranald's book treats generally of the effects on the European constitution of prolonged residence in tropical climates, and specially of the following diseases: anæmia of tropical invalids; chronic diarrhoea; chronic dysentery; congestion of the liver; torpor of the liver; and chronic enlargement of the liver. We have already seen that Sir Ranald's treatment of acute diseases is tolerably active, but in the chronic maladies any degree of activity would be misplaced. The blood is almost invariably impoverished, and the great indications of treatment consist in enriching that fluid, and restoring tone to the system.

In taking leave of Sir Ranald Martin, we have only to say that while his work on tropical diseases may be consulted with advantage by every physician, it will prove invaluable to those who mean to practise in warm climates, and more particularly if they are to hold offices of public responsibility.

Ten Days in Athens, with Notes by the Way. By Dr CORRIGAN, Physician in Ordinary to the Queen in Ireland, etc., etc. Pp. 227. London: Longman & Co.: 1862.

Now when the season for the annual holiday of hard-worked professional men has arrived, when guide books are anxiously consulted, and routes carefully laid out, it will not be out of place to lay before our readers a short notice of an excursion of a somewhat more ambitious character than the busy physician can generally find time to undertake.

Dr Corrigan, accompanied by his daughter, left Dublin on the

19th of last August, and proceeded by London and Paris to Marseilles. Having escaped with their lives from the plague of mosquitoes, the travellers embarked on one of the steamers of the "Messageries Imperiales," called for a few hours at Messina (notorious for beggars, pickpockets, and cheating boatmen), and after a rough passage arrived at the Piræus, the seaport of Athens, just ten days after having left Ireland. Taking up their quarters in the Hotel d'Angleterre, the next ten days were spent in visiting the Acropolis, the Areopagus, the Temple of Theseus, the Parthenon, Eleusis, Salamis, and Pentelicus, places, any one of which it would be well worth a journey to visit. As it was now time to turn homewards, the travellers were conveyed in a Greek steamer to Syra, one of the Cyclades, where they joined one of the Austrian Lloyds' vessels, which brought them to Ancona. Passing through Rimini and Forli, they proceeded by vetturino and diligence to Florence, and returned to Paris, *via* Genoa, Turin, the Mont Cenis, Lyons, and Vichy. The whole time spent in making the tour from Paris to Athens by the Mediterranean, and back to Paris by the Adriatic, was thirty-eight days. It would be difficult to go over in the same time more interesting ground.

The work before us gives the details of this journey, and its purpose is thus modestly stated by Dr Corrigan,—“I have travelled for my amusement, and written for my amusement—sometimes for my instruction. Perhaps some who have not travelled over the same route may read for their amusement, though not for their instruction, the observations and thoughts that rose as we flew through a tour of six weeks.” We can say for ourselves that we have travelled over the ground along with Dr Corrigan with much interest, and any of our readers who may follow our example will not be disappointed. They must not look for a minute account of the different places visited; the book is essentially a holiday production, and professes to contain little more than the first impressions of a well-informed and intelligent gentleman. There is no attempt at bookmaking, no got-up enthusiasm; notes of what gave pleasure at the time may confer pleasure upon others.

The following quotations will serve as specimens of Dr Corrigan's style and the general spirit in which the book is written. The first refers to that most depressing of all maladies, sea-sickness, and conveys the doctor's experience in regard to it:—

“I will digress for a moment to give a few words of advice about sea-sickness. There are some occasions, such as this night, when all prevention or treatment is useless; but in all ordinary cases, if in dread of sickness, lie down on the back at least a quarter of an hour before the vessel starts. No position but that of recumbency on the back will do. Let head, body, and back become as it were part of the vessel, participating in its motion without any muscular effort. This precaution is often of itself sufficient. It will be of little use to assume this position after the sickness has commenced. It must be beforehand. Two years ago, I met, at Naples, a gentleman about to embark, who said he could not describe the agony he endured in the best weather. I told him to go to

his berth while the vessel was still at anchor, to lie on his back and shut his eyes; on no account to turn on his side. He took my advice; and next morning, when we cast anchor at Civita Vecchia, he came on deck with joy in his face to tell me that, for the first time in his life, he had passed through a voyage without being sick. If the sickness come on, neither eat food nor drink soup, nor anything of the sort. The stomach, once it begins to go, will neither be equal to solid or fluid food, and as the shortest means of getting rid of it, sends it back as it came; but drink plenty of plain water, iced if you can get it; when after some time you begin to feel that you can think of swallowing, then take a little champagne and water, or soup with cayenne pepper, and you will soon feel comfortable."—Pp. 46, 48.

After the sombre and clouded skies of what is called by courtesy a Scotch summer, which this year has been even more cheerless than usual, who would not long to see the Parthenon under such circumstances as the following:—

"The blue of the sky over Athens is something impossible to describe; but to see it in all its glory, see it at sunrise, and for a little afterwards. If the sun has been two or three hours above the horizon you can scarcely look up under the glare; but while the sun sends his level rays across plain and hill tops, there is a blue dome above you that no words can describe, and no pencil can paint, such deep, deep blue,—deep as if the mighty dome above were solid but yet not solid, but as if the deep, deep blue, were colour alone, and interminable in its depth. It is with this colour, and with this alone in view, you should see the Parthenon. Sit where I have pointed out, and then have no other sight before you but the marble columns of the Parthenon, and the blue dome all above and around and beyond, and as you look through those mighty columns you see, and see only, between them the deep blue, which seems to have come so close as to fill up the space between column and column—not a speck of cloud or other colour is there. It is thus you should see the Parthenon,—nothing before you but the noble Temple, nothing above you or around you but the deep blue of heaven."—Pp. 103, 104.

We conclude with an extract, written in a somewhat different strain. Having heard that a fête was to be held at Salamis, Dr Corrigan proceeded thither, and was initiated into the mysteries of the "Romaika," said to be the Pyrrhic dance of the ancient Greeks. But alas! the classic dance on these classic shores was a failure, and proved immeasurably inferior to a good Irish jig!—

"The music was a wretched guitar and a violin, which the fiddler played with the bow in his left hand. A circle being formed, sixteen young women joined hands in a half circle; and a man taking the hand of the first commenced slowly leading them round and round, all with the most serious expression of face; and occasionally varying this circumgyration by making a step forwards and then a step backwards. The dance did not put on the most distant approach to merriment; and it appeared a very dull affair. Indeed I could compare it to nothing so truly as to a very lazy dog going round and round after his own tail. This lasted a very long time; and then the two musicians advanced to the centre of the circle, and the fiddler shook his elbow a little faster; and I saw a smile on one or two of the women's faces, and I thought we were to have a merry dance; but the man, the leader, never relaxed a muscle,—he looked all through like grim death. To the music the women quickened their pace just so much as now and then to lift a foot; for in the first part it was all shoveling along with slippers down at the heels; but the jollity never went further,—and this, as I saw it, is the far-famed 'Romaika.' There is still this oriental barbarism among them—the men and women do not dance together. I went out on the side of the hill, and so grave a fair and fête—for it was both—I never saw. No laughing, no sports, no toys for children.

There they stood round a gambling table, or sat to eat melons and bread under the trees. The only exception was in two or three groups of men dancing in parties of four,—the men resting their hands on one another's shoulders, and going slowly, reeling round like half-dead teetotums; and after this had lasted far a long time they would separate and dance opposite to another for a few minutes in a little more rapid style. . . . Oh! for an Irish fair.—Joyous shouts—merry laughs—fiddles playing—bagpipes droning—pigs squeaking—crakes going—horses kicking—donkeys braying—sheep bleating—dogs barking—cocks crowing—geese gabbling—cattle lowing—tents shaking—flags flying—the jig on the door—the fire on the sod, and the corn beef in the pot—this is an Irish fair; and in this I must award to my own dear country the choragic tripod, even against the isles of Greece and the Pyrrhic dance."

Veratrum Viride as a Therapeutical Agent. By EPHRAIM CUTTER, M.D. Cambridge, U. S.: H. O. Houghton: 1862.

THE object of this pamphlet is to recommend to the medical profession a therapeutical agent which has attained considerable local celebrity in America. New remedies are constantly being recommended, and as constantly falling into well-merited oblivion, but as there is a considerable body of evidence in favour of this, one of the most recent, we have been induced to say a few words regarding it.

The *veratrum viride*, or green hellebore, of the natural order Melanthaceæ, is indigenous in various parts of North America, and appears to have been first introduced into practice about ten years ago. Its chief physiological effect, and that on which its therapeutic virtues depend, is that of acting as a sedative of the heart's action; the respiration is at the same time somewhat diminished in frequency, the function of the skin and kidneys is stimulated, and, if the dose have been large, faintness, with vomiting, is induced. The diseases in which the *veratrum* is recommended are numerous; "in fact," says Dr Cutter, "there is hardly a complaint, 'from measles to hydrophobia,' in which it has not been employed." It is, however, stated to have been found most useful in fevers and inflammatory affections, pneumonia, bronchitis, pleuritis, puerperal peritonitis, and inflammation of the brain and its membranes. It has been found "invaluable" in some of the forms of functional and organic diseases of the heart; and in aneurism it has been called, by a recent writer, a "sheet-anchor." In nervous diseases generally, it has not been found successful.

The only officinal part of the plant is the root; and a tincture made by maceration and displacement is the most eligible preparation. The dose of the tincture for an adult is five to eight drops, given every two or three hours; the system is not fully brought under its influence until the second or third dose. "The effect upon the pulse is very marked, causing it to fall in a few hours from 80 to 40 or 50 per minute when in health, and in high arterial excitement, from 140 or 150, to 60 or 70." In some cases vomiting

and severe prostration have been induced; but the depression is said not to be dangerous, and to be easily controlled by stimulants or some preparation of opium. An important respect in which veratrum is said to differ from digitalis is, that it is rapidly eliminated, and does not possess any cumulative property.

A good deal of evidence is brought forward by Dr Cutter in favour of this new drug, and we have no doubt that it will prove valuable as a sedative of the heart's action. We must, however, remark that, though we are willing to believe that veratrum possesses physiological and therapeutic properties, we are not inclined to expect from it all the benefits its advocates anticipate. Acceleration of the circulation is in general but one of many symptoms, and it is quite possible to depress the heart's action without touching the disease.

Though the veratrum viride is a new medicine, it must be borne in mind that a plant belonging to this same genus has already been employed. The active properties of veratrum viride depend, there is little doubt, upon the presence of an alkaloid, which in all probability is identical with veratrine or veratria, derived from the veratrum album. This alkaloid has been employed in Europe, and appears to possess properties identical with those of the veratrum viride. It is a powerful depressent of the heart's action, and has been strongly recommended by some of the French writers in the treatment of rheumatism.

Third Part.

PERISCOPE.

PRACTICE OF MEDICINE.

CASES OF PARALYSIS FROM DISEASE OF NERVOUS CENTRES, WITH MICROSCOPICAL EXAMINATION, BY MR LOCKHART CLARKE.

THE following cases are so important as illustrating the light to be thrown upon obscure nervous affections by careful microscopical examination, that we append a tolerably full abstract of them.

Case I. Recorded by Dr W. T. Gairdner.¹

Dr P., æt. 65, of sanguine temperament and full habit, engaged in literary occupations, in the end of 1855 began to complain of neuralgic pains in the balls of the thumbs of both hands, which before long extended to the forearms and arms. Marked weakness of the hands, more especially of the right, gradually manifested itself, and was followed by diminution in size of the muscles of the thumbs and index fingers, which also became permanently bent inwards and towards the palms. In the summer of 1857, there was manifest deformity of the hands, which became flexed towards the wrists, with a constant tendency to

¹ Beale's Archives of Medicine, October 1861.

assume the prone position. The position of the hands and fingers at once conveyed to medical observers the impression of the "dropt wrist," resulting from lead poisoning. There was, however, an entire absence of cachectic appearance; there had never been colic; the bowels were not markedly constipated; there was no blue line on the gums; and no trace of lead could be detected in the urine after a most minute chemical examination.

The patient, when first seen by Dr Gairdner in October 1856, further complained of some degree of difficulty in walking, as well as of pain in the lower limbs, which had been a very early symptom, and also of a liability to trip in going down a stair. There was, however, no distinct indication of paraplegia, either in his gait or in his power of retaining his balance in the upright posture, although latterly the patient became very inactive and unwilling to walk.

Dr Gairdner accordingly regarded the case as an example of that form of paralysis described by Cruveilhier and others under the name of "*paralysie musculaire atrophique*," or "*atrophie musculaire progressive*." The chief points of resemblance were the wasting of particular groups of muscles; the symmetrical character of the disease; the preservation of the tactile sensibility; and the absence of any central paralysis, or, indeed, of any, except the most vague indications of disorder (even functional) of the brain and spinal cord. The existence of pain distinguished this case from the examples of the disease recorded by Cruveilhier, although pain has been noticed by other observers to a greater or less extent. The excessive sensitiveness to low temperatures, and the muscular vibrations which have been sometimes observed, were not present in Dr P.'s case.

The advance of the disease was attended by an almost childish degree of helplessness, and a pitiable state of mental irritability and hypochondriac depression, while up to a late period his appetite continued good, his colour florid, the tendency to take on fat was not checked, and the pain never appeared to be acute. He constantly complained of the "torture and agony" he experienced, and displayed a morbid craving for sympathy. Still, with great loss of self-control and mental energy, there was no delirium, no disorder of the senses, no inconsequence of reasoning, and no delusion; his sight was good for his years; his hearing was unimpaired; his articulation was perfect; his memory seemed to be good; and, except that his constant preoccupation with his sufferings prevented the right use of his mental powers, his intellectual and moral faculties were wonderfully little affected by the disease. There was never any headache, dizziness, numbness, or impaired sensibility; no disorder of the special senses; never anything approaching to coma or convulsions (with a doubtful exception in November 1856); there was no paralysis of the articulation, of the voice, or of the respiration; and, in general, the voluntary movements, with the exception of those of the specially affected groups of muscles, were normal. From a very early period in the history of the case there was a very distinct difference in the size of the pupils,—the right being constantly larger, by perhaps one-third, than the left.¹ Neither pupil, however, could be said to be decidedly beyond the range of physiological difference; and it was very difficult to determine anything positively abnormal in the movements of either, considered apart from the other. There was no corresponding difference in the distinctness of vision in the two eyes.

Within the last year or two of Dr P.'s life there was a gradual falling off in strength and general health, with an equally gradual and regular increase in the rapidity of his pulse, which, from 65 at the beginning of his illness, had risen to 100 and upwards towards the end of his last year. The respiration was not proportionally affected. He could not be prevailed upon to take either walking or carriage exercise, and for many months was unable to feed himself or use his hands in any serviceable way. His death occurred in January 1861, and was preceded for a few days, or probably caused, by an attack of laryngitis.

¹ Dr Day, however, thinks that this difference in the size of the pupils existed before the commencement of the disease.

The following remarks regarding the treatment adopted are from the report of Drs Adamson and Bell:—

"As respects treatment, it may be mentioned that he made a long-continued trial of the following remedies,—viz., iodide of potassium with sarsaparilla, strychnine, quinine, valerianate of zinc, phosphate of zinc, arsenic, tinctures of lobelia and lupulus, of cantharides, ergot of rye, *actea racemosa*, with various mineral acids. Throughout the progress of the disease, he employed occasional, and for the last two years regular, laxatives of colocynth and henbane, varied by the more active preparations of scammony and calomel. He had sedatives in every variety of form, externally and internally, and for the last three years took Battley's sedative solution regularly every night, consuming about $\frac{3}{4}$ xxx. each year, besides trying chlorodyne, chloric ether, conium, henbane, lupulin, etc., etc. He tried galvanism and regular friction, or shampooing of the limbs, wet bandages, etc., etc. Subcutaneous injection of morphia was repeatedly tried when pain was concentrated in any individual spot.

"Among other systems of treatment, he made a lengthened trial of the waters at Aix-la-Chapelle, and visited also several other German baths, including a water-cure establishment; he also placed himself, for a time, under a quack-doctor, whose grand specific was systematic friction and kneading of the spine. These plans of treatment he discontinued only on being thoroughly convinced that they did him no good.

"Counter-irritation along the spine was also had recourse to, but each and all without the experience of any, even temporary, relief. The diet was always generous, and with a liberal allowance of stimulants."

The post-mortem examination was most carefully performed by Mr Bayldon, in the presence of Drs Gairdner, Adamson, and Bell, two days and a half after death. The general result, as regarded the organs of the thorax and abdomen, was that there was no appreciable amount of disease. The *larynx* alone presented anything which could be supposed to account for the difficulty of respiration experienced in the last few days of life. The appearances there were those of distinct, though very slight, œdema glottidis, with considerable congestion of the mucous membrane extending towards the trachea.

The *arteries* generally were slightly atheromatous, and there was a considerable deposit of fat in the thoracic and abdominal parietes, as well as in the mesentery and omentum.

The *brain* appeared strictly normal as regarded both the grey and white matter. The arteries at the base were considerably atheromatous, and there was a slight degree of opacity of the arachnoid from the olfactory nerves backwards to the commencement of the medulla oblongata, as well as in the fissure of Sylvius, and about the inferior vermiform process of the cerebellum.

The *nerves* at the base of the brain were natural, except that the right third nerve was distinctly smaller and duller in colour than the corresponding left nerve.

The *cerebellum*, *pons Varolii*, and *spinal cord* were placed in a solution of chromic acid, with a view to their being transmitted to Mr Lockhart Clarke.

The *spinal cord* was unfortunately injured at one point while being removed.

The *nerves* arising from the medulla oblongata and spinal cord were generally examined as to their size and other characters, but without any positive result.

The balls of the thumbs were much atrophied, the flexor muscles of the thumb pale. The muscles of the forearm generally were small and rather flaccid, but their colour was well preserved. There was no very apparent difference between the flexors and extensors.

The atrophied muscles were examined microscopically, and proved to be at some points almost devoid of striæ; but although very slightly granular in the ultimate fibre, they were by no means in an advanced state of fatty degeneration.

Examination of the Cord, etc., by Mr Lockhart Clarke.

In the cervical enlargement of the spinal cord there was a deep, broad, ragged wound, which had entirely destroyed the posterior white columns, with

the whole of the posterior cornua or grey matter, as far forward as the central canal. The morbid change which existed at the part had probably made it more than usually liable to damage.

Internal state of the cord.—With the exception of a considerable deposit of *corpora amylacea*, there was no actual change of structure through the whole of the lumbar and dorsal region, to the lower end of the cervical enlargement. In the cervical region, however, there were decided evidences of morbid changes of structure in the posterior grey substance, extending in a variable degree from the lower end of the cervical enlargement to the third cervical nerves. The lesions were probably more extensive than elsewhere at the middle third of the cervical enlargement, which was accidentally destroyed. When the cord had been hardened by chromic acid, and thin sections of this portion were subjected to a magnifying power, the posterior grey substance, particularly on the right side, was seen to be interspersed with a number of unnaturally transparent streaks, patches, or spots, of different shapes and sizes, these spots being most frequently found around or at the side of bloodvessels. In some sections these morbid spaces appeared as mere fissures or cracks, which, under a low power, might have been considered as the result of accident, had they not been so uniformly found in only one portion of the grey substance, and more on one side than on the other. But when a sufficiently high power was employed, it became evident that these were not merely vacant spaces, but composed of a substance which differed entirely in its nature from that of the surrounding tissue. This substance had a delicate, transparent, and very finely granular aspect. The granules were more closely aggregated towards the centre of the mass, but were generally so fine that they could not be distinctly seen under a power magnifying much less than 400 diameters. There were no traces of granular corpuscles. Sometimes at the edges of these morbid spaces there *seemed* to be a kind of transition or degeneration of the surrounding nerve-tissue into the granular substance of which they were composed. In some instances the broken ends of nerve-fibres proceeding from the posterior roots were seen to project into opposite sides of these spaces, across which there was strong reason to believe that they had once been continuous. In ascending the cord, from the upper third of the cervical enlargement, the morbid appearances diminished in extent, and gradually disappeared about the third pair of cervical nerves. The *corpora amylacea* stated to have been met with in the dorsal and lumbar portions were found in still greater numbers in the cervical region of the cord; they varied in size from about that of a blood disc to the 1400th of an inch in diameter, were thickly accumulated round the central canal, and extended in small numbers through the whole of both the anterior and posterior commissures, but not beyond them.

The *medulla oblongata* had suffered no actual lesion either in its grey or white substance, but throughout its entire length was a large accumulation of *corpora amylacea*.

The whole floor of the fourth ventricle, instead of being smooth and shiny as in the healthy state, was paved with a multitude of granulations or small rounded eminences, very closely aggregated together. They adhered with some tenacity, and when examined microscopically were found to consist of globular aggregations of the ordinary epithelial cells which, in the healthy state, are arranged side by side, and form a smooth surface on the floor of the ventricle. The central part of the medulla beneath the fourth ventricle was in a softened state; but this appeared to be a post-mortem change, as there was an entire absence of granular corpuscles, and no indication whatever that the softened condition was the result of inflammatory action.

In reference to the pathology of this case, Mr Clarke is of opinion that the wasting and loss of power in the muscles of the hands and arms originated, not in the muscles themselves, but in the spinal cord, as the result of some peculiar degeneration and softening of particular points of the grey substance. "By the history of the case we learn that the loss of power and the pain *preceded* the wasting of the muscles; and that there was that muscular contraction,

with flexure of the joints, which is frequent in softening of the nervous centres. The *upper* extremities *alone* were the parts affected; lesion of the cord was found only in the *cervical* region. *Both* upper extremities were involved in the disease, but the *right* was more so than the left; and on *both* sides there was lesion of the spinal cord, but most on the *right* side. Time and patient observation can alone enable us to determine whether the 'paralysie musculaire atrophique' of Cruveilhier be really a specific disease of the muscular system, entirely independent of the condition of the spinal cord. There are many facts in favour of this opinion. But whether it be so or not, there is much probability, I think, that many cases which have been considered as examples of such disease, might be referable to some lesion of the spinal cord. I have little hesitation in declaring that if the cord in the case now under consideration had been examined in the way that cords have hitherto been examined, it would probably have been pronounced healthy, and that the disease would have been chronicled as a case of 'paralysie musculaire atrophique,' accompanied with pain; for in some places the lesional spots, though numerous, were so small as to be quite imperceptible to the naked eye. Out of all the numerous cases recorded as Cruveilhier's disease, and collected together in the valuable and able Essay of Dr Roberts of Manchester, in only thirteen was the nervous system examined, and in four of these thirteen some disease of the spinal cord was discovered. There may be very obscure structural changes in the grey substance of the cord, or perhaps only in the ganglia on the posterior roots of the nerves, that may affect the nutrition of the parts to which they are subservient, without interfering with the functions either of sensation or motion; and in cases like the one now in question, where the lesions occur in small isolated spots, the limitation of disease to particular muscles, or even to particular fasciculi of any one muscle, could be explained, I think, by the particular distribution of separate nerve-fibrils within the grey substance. But when there is a prospect of deciding the question by experience and observation, it is useless to waste time in speculation."

Case II. Recorded by Dr Radcliffe.¹

Mr Frederick P., aged 40, a native of the United States of America, and formerly a surgeon in the U. S. army, was admitted into the Westminster Hospital, under the care of Dr Radcliffe, on the 17th April, 1861.

"*Present state.*—Mr P. is in bed, propped up in a semi-recumbent position by pillows. His countenance is bright and intelligent, his complexion remarkably pale and transparent, his body and limbs greatly emaciated, especially the arms, which are literally little more than skin and bones.

"Asking him whether he was able to change his position, he gave utterance to some low, unintelligible sounds, and moved his legs about, but not his arms. On further inquiry, the arms were found to be wasted to the last degree, stretched out towards the pubes, and somewhat pronated and flexed, the relics of the muscles being tense and rigid, and altogether disobedient to the will. The legs could be moved about in any direction without much difficulty, but somewhat slowly, and all power of standing or walking was absent. In the arms, no sign of contraction could be produced by percussion or by the shocks of an induction coil, beyond certain slight flickerings in parts of the deltoid and great pectoral muscles; in the legs, no reflex movements could be produced by tickling the soles or calves. Examined carefully by the points of a pair of compasses as well as by pinching, there was no appreciable change in common sensation anywhere, not even in the hands and arms. Very expressive changes in the countenance, accompanied by shakes of the head, and certain faint inarticulate sounds, showed very clearly that pinching and tickling were by no means agreeable to the patient—showed, in fact, that the blight which had abolished speech and palsied the body to a great extent, had not extended to the mind. And Mrs P., who was standing by the bedside at the time, removed all doubt upon this point, by saying that her husband was 'too intelligent, if

¹ British and Foreign Medico-Chirurgical Review, July 1862.

anything,' and that he was never tired of hearing read books requiring attention and thought. 'I only wish he would sleep more,' she said, adding as her opinion, that sleeplessness and occasional attacks of difficulty of breathing were much more prominent and distressing symptoms than the palsy.

"On asking to see the tongue, this organ was found to be wasted, flaccid, and curiously slow in its movements. It did not appear to be more than half the usual size, and it certainly required many efforts before it could be got beyond the teeth. There was no deflection on protrusion. Deglutition was slow, and only accomplished with much difficulty. The appetite was pretty fair; the bowels somewhat constipated, but perfectly under the influence of the will. Nor was there anything wrong in relation to urination.

"All the time of the examination, the breathing was disturbed and hurried, more so at the beginning than afterwards. At first the walls of the chest were almost motionless. Now and then, after every twelfth breath or so, there was a pause, followed by a deep-drawn sigh. The pulse was about ninety, and not particularly wanting in power.

"In other respects, there was nothing positive requiring notice. There was no pain anywhere, and no tenderness in the cervical or any other region of the spine. Nor was there anything faulty in the action of the special senses.

"*Previous history.*—Mrs P.'s account is this:—Mr P. now and then giving assent by nods. Two years ago, while serving in California, he had a sunstroke, which made him insensible for half an hour, and left him weak and shaken for several days, but not to such a degree as to prevent him from resuming his duties within a week. A month later, finding his hands and arms becoming very weak, he was obliged to give up his appointment. Soon after this he was stunned by some ruffians, and robbed of all he possessed. Later still, after an interval of a couple of months probably, he got a place as surgeon on board a small vessel bound for England, and in this way he reached this country thirteen months ago. He had been incessantly sick all the way, and when he arrived, he was emaciated to the last degree, and scarcely able to move hand or foot. A week or two later, he was admitted into Guy's Hospital, and there he remained until a few days ago. He ascribes his exceeding paleness to a course of mercury, pushed to salivation, and continued over several weeks after his arrival in this country. Prior to the sunstroke in California, he had never, so he says, had a day's illness, but he allows that he had led a very dissipated and intemperate life up to that time.

"*Treatment.*—The treatment ordered was the continuous current from six simple galvanic cells along the palsied upper extremities, the poles applied one to each hand for twenty minutes at a time, twice a-day; and three times a-day two drachms of cod-liver oil, with five minims of the phosphorated oil of the Prussian Pharmacopœia. The diet ordered consisted of eggs (he preferred them to meat), beef-tea, an extra allowance of bread, and half-a-pint of port wine, half the wine to be taken with a little hot water and sugar at bed-time.

"April 18th.—Mrs P. says her husband has had a much better night than usual, and less difficulty of breathing upon awakening, and he assents by nods. He is breathing more freely than he did yesterday, there being now evident movement in the sides of the chest, though by no means as much as there ought to be. Upon carefully examining the chest by percussion and auscultation, there was found to be nothing in the state of the lungs or pleuræ to account for the hampered state of the breathing. At the time of this visit, he was trying to swallow a morsel of bread sopped in beef-tea, and he must have been at least five minutes before he succeeded. He likes the galvanism, and thinks it does him good.

"April 20th.—In very good spirits, thinking himself decidedly better.

"April 22d.—*Dead.*

"Death happened suddenly in the night. At 4:30 A.M., the night-nurse left him awake, and as well as usual; a few minutes afterwards she was summoned from one of the adjacent wards by one of the patients, and before she could reach him, all was over. The patient who summoned the nurse, and who slept

in the next bed, said that he was awakened by the sounds of struggling and difficult breathing, and that he at once jumped out of bed and ran to find the nurse. On the previous day, he had expressed himself in some way intelligible to his wife as certain of recovery, and at bed-time he was quite quiet and comfortable.

"*Post-mortem examination twelve hours after death.*—Body exceedingly emaciated, especially in the arms, which, as before said, are literally little more than skin and bones. Rigor mortis universal and perfect. No trace of injuries about the head or elsewhere. The brain and its membranes perfectly healthy.¹ The membranes of the spinal cord healthy, but the cord itself without any evident brachial enlargement. Looking at the cord as it lay in its canal, it seemed to be of the same diameter throughout; it seemed, too, as if the nerves proceeding from the brachial enlargement were smaller than they ought to be. No sections were made, as the whole cerebro-spinal axis was reserved for special examination hereafter. The thoracic organs presented no sign of disease beyond these, that the heart was a little paler and smaller than usual, and that the lungs were somewhat gorged with blood. The abdominal viscera were all healthy."

From a statement furnished by Dr Gull, regarding Mr P.'s condition when he came under his care in February 1861, it appears that "at this time the muscles of the upper extremities were thin and wasted to the last degree. There were still traces of contractility of the muscles under galvanism, most marked in the right arm. The sensibility was diminished, but not lost. The muscles of the lower extremities were thin and feeble, but not paralyzed. He could flex the legs, and the sensation was not greatly lessened. He retained power over the sphincter. The urine was acid and normal in colour. The articulation was much affected, so that he could hardly make himself understood. The tongue could be put out, but only to a slight extent, and with a tremulous quivering motion. The eye was intelligent, and the features not inexpressive. Deglutition was impaired."

Morbid Anatomy of the Nervous Centres. By Mr Lockhart Clarke.

In the *lumbar* region, the diameter of the cord was not appreciably diminished; but in transverse sections, it was evident, that through the *middle* of the enlargement the anterior cornu of grey matter was rather smaller than natural. The nerve-cells composing the large groups, were found to be much reduced in number; but, on very careful examination of sections, prepared according to Mr Clarke's own method, the missing cells could be detected lying between the others, much diminished in size, none being larger than the *nuclei* of the surrounding healthy cells, without any trace of nuclei or distinct granular contents, and in some cases resembling shrivelled sheaths, or radiating portions of connective tissue. The central canal was about the normal size, but the epithelium around it was increased or hypertrophied. In the upper third of the lumbar enlargement, the anterior cornua were but little affected, but there was the same hypertrophy of epithelium around the canal; and beyond this, chiefly in the substance of the posterior commissure, there were in some sections small irregular or oval patches, of a clear or finely granular material, which would seem to have been originally semi-fluid. Scarcely any traces of corpora amylacea were observed; but both here and in the anterior grey substance, the bloodvessels appeared larger than usual. The posterior cornua were in every respect healthy.

In the *dorsal* region of the cord, not only was the grey matter diseased, but there was considerable displacement of some of its parts. In most cases the posterior vesicular columns were normal in size and structure, but in some sections the left column was the smaller, and in many both columns were dis-

¹"This is evidently a mistake in the notes, for, on examining the brain, Mr Clarke found the membranes firmly adherent along part of the marginal convolution of the longitudinal fissure, and the cortical grey substance corresponding thereto in a softened state."

played unsymmetrically with regard to the other. In almost all these sections some of the nerve-fibres of the transverse commissure, between the vesicular columns, were more or less injured, while some of them were entirely lost or eroded. In this commissure, and in other parts around the canal, were some small round or oval spaces, filled within with a pellucid, or more or less granular material. They were most numerous towards the middle of the dorsal region, and were most frequent around bloodvessels. In the upper part of the dorsal region, the cord was least affected; indeed, there was scarcely any morbid appearance, save a trifling hypertrophy of the epithelium and connective tissue around the canal.

In the *cervical* portion of the cord there was extensive disease. That portion of it known as the brachial or cervical enlargement, was not larger in diameter than any part of the same region, so that in reality there was no cervical enlargement at all. On making transverse sections, it was perceived that the anterior cornua of the grey substance were unnaturally small, and somewhat altered in shape. At first, scarcely a vestige could be seen of the large groups of cells which are found in corresponding parts of the healthy cord; but when the sections were prepared according to Mr Clarke's own method, the entire groups of cells could be distinguished, although the cells were wonderfully altered in appearance, all being more or less atrophied or shriveled. In the upper part of the brachial region, the number of healthy cells was greater than in the middle and lower part, but their proportion to the atrophied cells was still small. Through the remaining cervical portion of the cord, there was a similar state of atrophy of the grey substance.

All the white columns of the cord in every region, but particularly in the cervical region, had suffered more or less from atrophy or degeneration. In the nerve-fibres the change was observed chiefly in the axis-cylinders, which were frequently reduced to less than one half their normal diameters. Between the fibres, however, the connective tissue was unnaturally abundant; and the hypertrophy of this tissue, with atrophy of the white nerve-substance, appeared to be the chief causes of the displacement of parts already described. In the cervical region, the anterior roots of the nerves were decidedly below their average size.

No part of the *medulla oblongata* was perfectly healthy. At its lower part, the only morbid appearances were occasional and trifling atrophy of the nerve-cells in the anterior grey substance, with some hypertrophy of the connective tissue of the *white* substance. But from about the lower end of the olivary bodies to the commencement of the fourth ventricle, the morbid changes were much greater and more extensive. This space includes the principal part of the grey tracts or vesicular centres, from which the hypoglossal or lingual nerves take their origin. Above the calamus scriptorius, these tracts or cylindrical columns of nerve-cells form part of the floor of the fourth ventricle along the sides of the median line; and below the calamus, they lie in front of the central canal, at the sides of the median raphe.¹ They consist of large multipolar nerve-cells, like those of the anterior cornua of the cord, of which they are the analogues. Now these grey columns were, in some parts of their course, reduced to about two-thirds, and, in other parts, to one-half their natural diameters; while their cells, like those of the anterior cornua of the cord, were more or less shrunk or atrophied. The hypoglossal or lingual nerve-roots in their course through the medulla, were also in some places not more than half their natural size; and in other places could scarcely be discerned.

The central nucleus of nerve-cells which gives origin to the *upper* roots of the spinal accessory nerve,² was not appreciably affected.

Both of the olivary bodies, with their transverse decussating commissure, were healthy; none of their numerous cells appeared to have suffered any

¹ See Researches on the Grey Substance of Spinal Cord: Philosophical Transactions, 1859, Fig. 12, plate 25.

² See Mr Clarke's Researches on the Intimate Structure of the Brain: Philosophical Transactions, 1858, Plate 16, Figs. 28-32.

degree of atrophy; but behind them, in the central parts of the medulla, some of the nerve-cells scattered amongst the transverse arciform plexus, as well as the axis-cylinders of longitudinal fibres, were affected in this way.

The fourth ventricle, pons Varolii, and indeed every other part of the encephalon, except one of the superficial convolutions, were in a healthy state. This was the marginal convolution of the longitudinal fissure (*Première convolution de deuxième ordre*, of Foville). For about an inch of its length, near the middle of its course, the membranes were very closely adherent to its grey surface, which was softer than natural, and could not be separated from them without laceration.

CASE OF PARAPLEGIA (MYELITIS)—RECOVERY. BY DR BROWN-SÉQUARD.

JAMES S., aged 37, was admitted for paraplegia on November 27, 1860. In his work he was much exposed to a great deal of heat, and in the month before admission, when the disease began, he got wet through several times. The first symptoms were violent pains in the loins and hips, and then a gradual loss of motion and sensation in the legs, until at length they were quite paralyzed. There was no difficulty with the bladder or rectum at any time. He was at first treated in a general hospital, and subsequently at home, but did not improve. He had at one time of his treatment some pills which the surgeon had told him would "rouse up his nerves." The taking of the pills on each occasion (three times), gave him very great pain in his back, and caused his legs to move up and down involuntarily,—“like a steam-engine.”

When admitted under Dr Brown-Séquard's care, he presented the characteristic symptoms of myelitis. Dr Brown-Séquard prescribed, November 27, 1860, iodide of potassium six grains, sesquicarbonate of ammonia two grains, sulphate of quinine two grains, tincture of rhubarb one drachm, tincture of hyoscyamus twelve drops to be taken three times a-day. A plaster of belladonna was applied to the back. On December 14, in addition, a pill containing two grains of secale cornutum and a quarter of a grain of the extract of belladonna, was given three times a-day. For some weeks he was no better. He then gradually improved, and on June 17, 1861, he was able to walk four or five miles. He is now (October 1861) quite well; he can walk, he says, as well as ever, and his muscles are now firm and contract well, but formerly they were soft, flabby, and cold.—*Medical Times and Gazette*.

ON TOBACCO AS A CAUSE OF ANGINA PECTORIS. BY DR BEAU.

AMONG the bad effects produced by the excessive use of tobacco may be mentioned vertigo, chronic sore throat, dyspepsia, and cough accompanied with emaciation simulating phthisis. To these morbid conditions we must now, according to Dr Beau, add angina pectoris. This opinion is founded upon eight observations contained in an interesting paper lately laid before the Academy of Sciences. These facts have an additional value because they agree perfectly with the experiments of M. Claude Bernard upon nicotine, and are illustrations of the doctrine which considers angina pectoris as being an affection of the muscular substance of the heart, with irradiations in the thorax, the neck, and the upper extremities.

M. Bernard has proved that nicotine, a poisonous alkaloid as powerful as prussic acid, though acting in a different manner, produces its principal effects upon the nerves, upon the muscles, but especially upon the vascular system. In a moderately strong dose, this substance produces in the muscles convulsive movements which may terminate in a permanently tetanic condition; whilst, if the dose is small, the first effects are produced upon the heart and lungs, giving rise to acceleration of the respiration, and increased energy of the cardiac pulsations. A clear proof that the nerves are the organs of transmission of this complicated action is, that after the division of the pneumogastric none of these phenomena are manifested. It is important to add, that the action upon the muscular system is produced exclusively when the nicotine is pure and in

sufficient quantity; whilst, if it is diluted or mixed, it acts specially upon the respiratory apparatus and the heart.

Of course, Dr Beau does not suppose that the abuse of tobacco is the only cause of angina. On the contrary, he says, that the causes of this affection are numerous, and he has only pointed out an additional cause which had not been previously attended to. He also adds, that for the production of angina among smokers a series of conditions is required, which is only rarely met with. These conditions are:—1st, the excessive use of tobacco; 2d, a special susceptibility of the individual; 3d, debilitating influences, such as anxiety, fatigue, an enfeebled condition of the digestive organs, etc., which, preventing the organism from getting rid of the tobacco absorbed, allow it to accumulate to such a degree, that nicotine is present in sufficient quantity to produce its poisonous influence upon the heart.

The following are the observations appealed to by Dr Beau:—

1st, A small proprietor, sixty years of age, passed the greater part of his time in smoking. For about a month he had often experienced, during the night, attacks of palpitation, with oppression and pain radiating to his shoulders. He ceased smoking; the nocturnal attacks disappeared completely at the same time that his digestive functions improved. At the end of three months he recommenced to smoke, and the attacks returned. He then definitively abandoned the use of tobacco, and the attacks of angina ceased, never to return.

2d, A medical practitioner, fifty years of age, feeble and dyspeptic, although appearing healthy and robust, smoked cigarettes as much as his occupations would permit. During some time he suffered from palpitation with severe pain and constriction of the chest, which came on indifferently during the day or night. He gave up tobacco, and the attacks disappeared. One day, he was in the company of smokers, and although he did not himself smoke, he could not help breathing an atmosphere impregnated with tobacco. The following night he had an attack.

3d, A medical practitioner in the country, thirty-five years of age, was in the constant habit of smoking cigarettes while going about to pay visits. For some time he had eaten very little, and without appetite. One morning, having eaten nothing, and while smoking, he was suddenly seized with severe pain in the region of the heart, with a sense of constriction in the upper part of the chest. He could neither walk nor speak, the pulse was imperceptible, the hands cold. The attack lasted half an hour. The patient came to Paris and consulted Dr Beau, by whose advice he gave up the use of tobacco. He returned home, promising to write to Dr Beau if he had another attack. Nothing has since been heard of him.

4th, A young Spaniard, thirty years of age, was constantly smoking cigarettes. His appetite entirely failed, and digestion was difficult. One evening, while smoking, he was suddenly seized with a violent pain in the chest, as if he had been squeezed in a vice; his pulse was imperceptible. The attack lasted ten minutes. Much alarmed, he consented to smoke a great deal less, and there has been no return of the symptoms of angina.

5th, A physician who has renounced tobacco on account of the gastric derangement which he suffered from, experienced at the time when he was a smoker nocturnal pains coming on in paroxysms, and characterized by a constriction of the thorax with palpitations, and neuralgic pains shooting into the neck. He is now completely free from these seizures.

6th, A merchant, who for fifteen or twenty years had suffered from dyspepsia, occasioned by the immoderate use of tobacco, has suffered for about two months from nocturnal attacks, characterized by agonizing pain in the region of the heart, with palpitations, and painful radiations extending to both shoulders; the appearance of the face is altered, the pulse is small and intermittent. In spite of the existence of these symptoms, this person smokes more than ever.

7th, An old man of seventy-five, fresh and vigorous, smoked a great deal in order to distract his mind from various sources of annoyance, although he had

had several slight suffocative paroxysms. On a Saturday, he had an attack of angina, which lasted for half an hour; next day, the attack recurred; on Monday morning, he was found dead in bed.

8th, A foreign diplomatist who smoked a great deal, and who was in a feeble condition although he appeared robust, was seized one evening in returning home with an attack of angina; his pulse was small, his hands cold, his appearance choleraic. He fell asleep at eleven o'clock, and awoke next morning at his usual hour. He was able to go through all his ordinary duties, and at five o'clock in the afternoon was seated smoking in his arm-chair, when he suddenly expired. On post mortem examination the only lesion found was a fatty condition of the heart.—*Journal de Médecine et de Chirurgie pratiques*, July 1862.

ON THE TREATMENT OF ACUTE RHEUMATISM, ETC. BY DR W. H. DICKINSON.

AT the meeting of the Royal Medical and Chirurgical Society, held on the 10th of June, Dr Dickinson read a paper on the above subject. This paper was based upon a tabular condensation of the cases of acute rheumatism which were admitted into St George's Hospital during the five years ending on December 31st 1861, and in whom the heart was, on admission, unaffected by the disease. The method of treatment adopted in any particular case depended very much upon the chance of the patient coming under one physician rather than another; and a comparison of the results would, to a certain extent, be a guide to the value of the means used. The cases, therefore, were classified according to the treatment made use of. As the main object of the investigation was to ascertain the effect of remedies in preventing cardiac mischief, the arrangement was not altered by measures adopted in consequence of its occurrence. The tables were fourteen in number. The first gave the results of eight cases in which venesection was early resorted to, other medicines being at the same time used. In three of the cases endocarditis or pericarditis was clearly recognised. In one there was incomplete evidence of cardiac derangement. The heart, therefore, was absolutely uninjured in only half the number. The patients remained in the hospital for an average period of forty-one days. Bouillaud, who is the great advocate of bleeding in this disorder, and trusted to it almost exclusively, expresses his opinion that such complications are the rule, and not the exception. The second table gives the result of six cases treated solely with repeated doses of calomel and opium. In two subsequent classes were seen the effects of the same medicines aided by saline draughts, with and without nitre. The progress of the disease under each plan appeared to be much the same. The total of twenty-four cases presented six of inflammation of the heart or its membranes, of which two proved speedily fatal. The average number of days in hospital under mercurial treatment was thirty-seven.

The action of some reputed specific remedies was then considered. With regard to opium, reference was made to some tables published by Dr Sibson in the *Association Medical Journal*. Twenty-one cases are here recorded, in which, when the treatment was commenced, the sounds of the heart were natural. Opium was given in frequent doses, sometimes as much as a grain an hour, besides other remedies supposed to have an effect in rheumatism. No less than fourteen of these cases, or exactly two-thirds, manifested while under treatment symptoms of valvular or pericardial inflammation.

The cases, seven in number, treated with nitre alone, gave only one of cardiac complication. The average duration of the treatment was reduced to twenty-seven days. Further evidence in favour of nitre was deduced by comparing the result of cases treated with saline remedies alone, and those which had salines with nitre in addition. A table contributed by Dr Basham to the "Transactions" of the Society was quoted. Of sixty-seven cases of acute rheumatism treated with large doses of nitre, the heart being in each case unaffected at the commencement of the plan, six only had symptoms of inflammation of that organ.

In considering the treatment by saline remedies, the use of the term was limited in an arbitrary manner. It was assumed that the salts which potass and soda form with the vegetable acids undergo such changes in the system as to become equivalent, or nearly so, to the same quantity of alkali in combination with carbonic acid. Whether a certain quantity of potass is given as citrate, tartrate, acetate, or carbonate, the effect upon the urine and upon the system generally was held to be much the same. The arrangement was made accordingly. Those patients treated with an aggregate of such salts not reaching three drachms a-day were considered as under saline treatment; those taking as much as three but less than four drachms, as under partial alkaline treatment; those taking from half an ounce to an ounce and a half, as under full alkaline treatment.

Sixty-two cases appear to have been subjected to saline treatment, alone or with other remedies. These afforded a proportion of heart affection of 1 in 3.6. The conclusion was that salines in such quantities had but little influence upon the course of the disorder; when used in conjunction with more potent remedies, the result always corresponded with the observed effect of the additional medicines when used independently.

With the increased doses, which the author distinguished as partial alkaline treatment, no diminution of the heart symptoms was observed, although the disorder terminated in rather a shorter time.

The full alkaline treatment was exemplified by two tables. It consisted in the administration of the salts which potass and soda form with carbonic and the vegetable acids, in quantities varying from half an ounce to an ounce and a half daily. Half-a-drachm of the acetate, with twice as much of the bicarbonate of potass, dissolved in the *haustus ammoniæ acetatis* of the hospital pharmacopœia, furnished an ordinary form of prescription. This was given every four or six hours, and sometimes made to effervesce by the addition of a little citric acid. Salts of soda were sometimes resorted to. The total of forty-eight patients thus treated passed through the dangers of the disease, with only a single instance of any cardiac affection. In the exceptional case the murmur came on within twenty-four hours of the commencement of the treatment, and did not prove permanent. The average number of days in hospital, when this treatment was applied simply, was twenty-five, the smallest of all; when other medicines, as colchicum, were used in addition, five days were added to the average period. Dr Garrod's published cases, in which bicarbonate of potass was used alone, were quoted as rather less successful than those at St George's, in which neutral salts were given in addition. Twenty-four of Dr Garrod's cases afforded three of inflammation of the heart or its membranes. It was concluded that the carbonates of potass and soda, and those of their other salts which in the body are capable of being converted into the carbonates, exert an especial curative power in rheumatic fever, and, if given in time, will completely protect the heart from the dangers by which it is surrounded. Taking the proportion of heart affection under the alkaline system, 1 in 48, and, with this as a standard, reviewing the other plans of treatment, the result was striking. One hundred and thirteen cases, where other remedies were used, gave thirty-five instances of cardiac mischief, or a proportion of 1 in 3.2. Nitre, next to the alkalis, was the most successful. The general symptoms were shortened under its use, and the frequency of cardiac inflammation was reduced to 1 in 10. Regarding the other remedies which have been credited with the cure of acute rheumatism, it simply became a question which were useless and which injurious. Mercury allowed a proportion of cardiac inflammation of 1 case in 4. Saline treatment gave a worse result. With bleeding, one-half of the cases became thus complicated. Under opium the mischievous influence of the disorder attained its maximum. Two-thirds of the cases so treated had the symptoms of endocarditis or pericarditis. With the exceptions stated, it was maintained that the more active the remedies, the more untoward, generally speaking, is the progress of the disease. It was shown that the use of colchicum retarded the recovery of the patient.

The practical deduction was, that acute rheumatism is best treated by giving at short intervals a solution of nitrate, acetate, and bicarbonate of potash in such doses that ten or twelve drachms of the two latter salts together are taken in the twenty-four hours. Half a drachm of the acetate, with a drachm or a drachm and a half of the bicarbonate, and ten grains of nitre, would answer the purpose.

A brief review of the history of the alkaline treatment of rheumatism concluded the paper.

Dr Goodfellow had long been in the habit of employing the nitrate of potash in cases of rheumatism, in doses of ten grains to two scruples every four hours. This mode of treatment had no material influence on the duration of the disease, but prevented cardiac complications. In one case out of sixty only was the heart affected. He combined, however, with the nitrate the bicarbonate of potash. He always took the precaution in these cases of covering the chest with cotton wool. He had found this mode of proceeding most effectual in preventing cardiac disease. He had tried other remedies, however, in combination with the nitrate of potash, such as Dover's powder and the acetic extract of colchicum. Opiates at night with the colchicum seemed to cut short the duration of the disease, and prevent heart affection. Under this treatment also relapses were rare.

Dr Fuller had long employed alkalies in cases of rheumatism. Under this treatment he had never found the heart become affected, except in two or three instances, where inflammation had set up within twenty-four hours after the commencement of the treatment. He was in the habit of employing large doses of the alkalies with a view of producing an alkaline condition of the urine. When this was effected, he thought that it was unnecessary to test the condition of the heart, as he considered the patient safe from such complications. The duration of the disease under this treatment he thought was decidedly lessened. It was not necessary that the alkali should be potash, for the carbonate of soda had the same effect. His experience, however, of the carbonate of ammonia was that it was not productive of such decided results.

Dr Gull remarked that alkalies had been extensively employed in Guy's Hospital in cases of rheumatism. *Dr Golding Bird* was the first to recommend this plan of treatment. The practice, however, in his (*Dr Gull's*) hands had proved a decided failure. He had never thought that there was any proof that there was an acid state of the blood or urine in these cases. The perspiration was not always acid in the worst forms of the complaint. In some cases the patients' sweat had assumed three distinct forms,—alkaline, neutral, and acid. He could, therefore, see no expectation of relieving the patient by adopting a merely chemical plan of treatment. Colchicum, Dover's powder, hot baths, nitrate of potash, opium, and other remedies, he had tried without satisfactory results. His experience led him, therefore, to treat the disease empirically. After all, he thought it should be regarded mainly as an affection of the nervous system. He had been most successful by keeping the patient perfectly quiet, confining him to his bed, preventing the influence of all disturbing causes, and supporting him on the simplest diet. He had found rheumatism thus treated usually do well. Under it the heart was kept from disturbance, and consequently from anything like inflammatory disease. This treatment, with the addition of a little extract of taraxacum and peppermint water, administered as a placebo, had been most effectual in his hands. Out of sixty-four cases which he had thus treated, there was scarcely a case in which the heart had been affected. The author of the paper had adduced forty-eight cases in support of the treatment which he had advocated; but this was altogether too small a number on which to found a theory. Rheumatism was so different at various times, that it must always be studied in reference to what he might call its natural history. He doubted exceedingly whether the alkaline treatment could be regarded as specific against the occurrence of heart-disease. *Dr Goodfellow*, who so strongly advocated the employment of the nitrate of potash, seemed glad afterwards to add something else to his remedy. If the alkaline treatment was so successful, why did he do so?

Dr Stewart agreed in the main with the observations made by *Dr Gull*. He had found that the perspiration in cases of rheumatism was not always acid. On the contrary, he had found it in some instances intensely alkaline. The disease must be treated on common principles. Under simple remedies, with a due regard to the conditions of the patient, the greatest success would be attained.

Dr O'Connor differed from *Dr Gull* in regard to his do-nothing treatment. On the whole he thought the general treatment by alkalies noticed in *Dr Dickinson's* paper the best; but he considered that the bicarbonate of potash should be combined with the nitrate of potash or the acetate of ammonia, so that they might act upon the skin; the object of treatment being, in fact, to eliminate from the system a morbid matter. Rheumatism was a disease which must be treated according to the symptoms presented to us, and the condition of the patient. In exceptional cases moderate bleeding might be advantageously employed. In other instances, the administration of opium and calomel might be indicated. In fifty cases which he had treated at the Royal Free Hospital, only two women had been the subjects of cardiac inflammation, and one of those had cardiac affection on admission. All the patients recovered.

Dr Dickinson, in reply, stated that the doses of alkaline remedies administered in the cases which he had brought forward were much larger than those which had been resorted to in *Guy's Hospital*. To be effective the remedy must be carried out with energy and perseverance, and it was only in such cases that the treatment which he had advocated could be fairly tested.

Dr Gull, in reply to *Dr O'Connor*, remarked that so far from his treatment of rheumatism being liable to the charge of a do-nothing system, it was, on the contrary, a most careful and active mode of treatment. The patient must be watched and subjected to the most stringent rules which the medical attendant could adopt. So far from doing nothing in such cases, he did everything that the nature of the case under his treatment required. By regarding rheumatism as a disease essentially differing under different circumstances, the practitioner who took into consideration the state of the patient and the indications presented to him would, in his opinion, be more successful than the man who adopted a theory as applicable to all cases, and carried it out.

Dr Babington had been surprised that in the discussion which had taken place no allusion had been made to the influence of lemon-juice in the treatment of rheumatism. No remedy would appear to have been more effectual in controlling its duration, or preventing cardiac complications.—*The Lancet*.

ON THE TREATMENT OF ACUTE RHEUMATISM BY VERATRINE. BY DR BOUCHUT.

THE treatment of articular rheumatism by veratrine is no longer a novelty, but, in the case of children especially, the results are so satisfactory, that the use of this therapeutic agent cannot be too much insisted on.

A little girl, twelve years old, was admitted in the *Hospital Sainte Eugénie* on the third of June, suffering from acute rheumatism, affecting chiefly the feet, the knees, and the hips. The feet, in particular, exhibited the characteristic swelling and red colouration. At the same time, a blowing murmur with the first sound of the heart was detected on auscultation. The pulse was 120, irregular and intermittent. The rheumatic affection had consequently attacked simultaneously the living membrane and the muscular fibres of the heart. Under these circumstances, *M. Bouchut* decided to employ the treatment by veratrine. Veratrine may be given alone, but associated with opium it is better borne. The formula which *M. Bouchut* prefers is the following: veratrine, extract of opium, of each one grain; to be divided into ten silver-coated pills, each of which consequently contains one-tenth of a grain of the active principle. The patient takes two of these the first day (one in the morning, one in the evening), three the second, four the third, five the fourth, and increasing in the same way every day, unless colic or vomiting compels the

medication to be discontinued. Colic may generally be prevented by the administration every morning of emollient enemata. If in spite of this precaution any disagreeable symptoms supervene, the veratrine is discontinued, or the number of pills is diminished, to be increased again when circumstances permit. The first effect of this medicine is to bring down the pulse. In this respect veratrine is more powerful than digitalis. In eight days the pulse of the child, which, as mentioned above, was 120, fell to 60, 56, 52. At the same time, the pains yielded, the redness and swelling disappeared, and all this in less than eight days, with no treatment but twenty pills containing two grains of veratrine.

Such a result is certainly remarkable; and this is at least the thirtieth time that M. Bouchut has seen the same thing.—*Journal de Médecine et de Chirurgie pratiques.*

ON JAUNDICE: ITS PATHOLOGY AND TREATMENT. BY PROFESSOR HARLEY.

AT the meeting of the Royal Medical and Chirurgical Society, held on the 13th of May, Dr Harley read a paper on Jaundice.

It is universally admitted that the facility of the diagnosis of jaundice is only equalled by the obscurity of its pathology and the uncertainty of its treatment. In this communication, therefore, the author set about unravelling the nature of the various morbid conditions which give rise to it; and pointed out how, notwithstanding the seeming discord, they could all appropriately come under the two common heads of "jaundice from suppression of the biliary function," and "jaundice from the reabsorption of the secreted but retained bile." Moreover, Dr Harley shewed that the pathology of jaundice resulting from suppression is totally different from that arising from obstruction; and, consequently, that a line of treatment which would be appropriate and beneficial in the one form, would be detrimental, if not actually hazardous, in the other. Fortunately, however, the author pointed out a new method of distinguishing the two forms of the disease when all the ordinary means of symptomatic and physical diagnosis prove unavailing. The method consists in analyzing the urine, which, he finds, contains different morbid products according to the particular form of the disease. Thus, for example, in jaundice from suppression, the urine contains only those biliary ingredients which exist preformed in the blood. In jaundice from obstruction, on the other hand, the urine contains, in addition to these, the materials generated in the liver itself, and which have been reabsorbed into the circulation from the distended gall-bladder and ducts. A simple mode of distinguishing the two conditions is, to add to about two drachms of urine half a drachm of strong sulphuric acid, and a fragment of loaf-sugar the size of a pea. If at the line of contact of the two liquids a scarlet or purple colour is produced, it proves that the acids of the bile are present, and the case may consequently be put down as one of jaundice from obstruction. On the other hand, if no bile-acid reaction, but merely a browning of the sugar be observed, the case is in all probability one of suppression. Dr Harley pointed out, however, that care must be taken not to confound the two cases; as jaundice from obstruction, especially the severe form, often merges into jaundice from suppression.

The author also confirmed Frerichs' statement regarding the presence of tyrosine and leucine in the urine of acute atrophy of the liver; and further stated that he had also found these substances in the urine of chronic atrophy, so that their presence might aid in the diagnosis of the latter as well as of the former condition of the hepatic organ. Several cases were cited illustrating the value of the different methods of diagnosis; and the author concluded by pointing out the class of cases in which mercury and other remedies were likely to be beneficial, and where they were likely to do injury. He specially recommended the employment of benzoic acid in jaundice from suppression, and inspissated bile in that arising from obstruction, in which latter class the patient frequently dies from slow starvation, in consequence of the absence of bile in the digestive process causing imperfect assimilation of the food to take place.

Dr Harley also called special attention to the fact that bile, as now employed, more frequently does harm than good; for, when given along with the food, instead of aiding the digestive process, it actually retards it by interfering with the action of the gastric juice. If, on the other hand, bile be administered, as the author proposes, at the end of stomachal digestion, it acts (as in the healthy organism) on the chyme, and renders it fit for absorption. In order still further to insure this desirable object, Dr Harley has had bile specially prepared and put up into capsules, which are not readily acted on by the gastric juice, but which, on being dissolved in the duodenum, allow the bile to come in contact with the food at the proper moment, and thereby enable the physician to imitate nature, and supply an important element to the system.

The communication was well illustrated with preparations and drawings.

Dr Edward Smith, after dwelling upon the great interest of the paper, referred to two subjects explained in it which had struck him—the importance of determining the amount of urea evolved, and the alleged mode of action of acids and alkalies. In the case referred to there had been a large ingestion of nitrogenized food, and yet the amount of urea had diminished from about 450 grains per day, which, at fifty years of age, would be about the standard quantity, to between 300 and 400 grains—a fact which proved clearly that a large portion of the nitrogenized food had not entered the blood, but had passed off by the bowel. He thought the determination of the amount of urea in cases of defective assimilation was of the utmost value; but since there were normally great variations in the daily elimination of urea, it was essential that experiments should be extended over several days successively; and it would be more satisfactory to determine at the same time the quantity of nitrogen eliminated by the bowel. He considered that the explanation of the mode of action of acids and alkalies was most ingenious, but he doubted as to its validity. It might be, as suggested by the author, that an alkali being given excited the formation of gastric acids, which then passed into the bowel and interfered with the alkalinity of the biliary and pancreatic juices, and thus prejudiced the digestion of fats; but, if so, the smaller the quantity of alkali administered, the less amount of acid secretions would be induced. Without admitting or denying the explanation, he must affirm that alkalies were very serviceable in numerous cases of jaundice.

Dr Chambers said the author had referred to jaundice caused by pneumonia and the zymotic fevers, but had not explained how it occurred. He wished to ask the author if in these cases he had examined the blood, and if so, in what state and form the colouring matter was found. In pneumonia there is colouring matter in the fæces and urine, and also in the skin, and the serum of the patient's blood is dark. In these cases there is no obstruction of the bile-ducts. It was said by some that jaundice occurred in those cases of pneumonia in which the right lung was affected; but he (*Dr Chambers*) had found it in cases of pneumonia on the left side. Again, in zymotic fevers there was no local action. Cases of this kind had an important bearing on the explanation of jaundice.

Dr Marcet said the examination of the fæces would often clear up difficulties in the diagnosis of the cause of jaundice. If the bile is retained, there is in the fæces an abnormal quantity of fat, and hence the fæces are white, and by alcohol much fat may be extracted. There was not, however, enough to be recognised by the eye. The fatty matter does not exist as neutral fat, but as fatty acids. This passage of fatty matter showed that it was not the pancreas alone which had to do with the digestion of fats. In reference to the method of administering bile by the stomach in cases of jaundice, he (*Dr Marcet*) thought there would be considerable danger of inducing vomiting.

Dr Edward Smith asked *Dr Marcet* if he thought that, in cases of phthisis in which, large quantities of cod-liver oil being given, there was fatty matter in the stools, this was due to deficiency of bile?

Dr Marcet said he should infer that the oil was in excess rather than that the bile was deficient.

Dr Harley remarked that he was much gratified by the interest shown in the paper by the members of the Society, and glad to find their views so much in accordance with his own. The analysis of the urea had been made for the precise purpose *Dr Smith* mentioned, and in the case in question had afforded most important information, not only as regards the diagnosis, but also in relation to the treatment. In reply to the remarks of the President and *Dr Chambers*, he said he thought that the pathology of cases of jaundice accompanying pneumonia came under the head of jaundice from suppression, and more particularly that kind arising from passive congestion of the liver. It had been shown in the communication, for example, that jaundice is a common accompaniment of any cause obstructing the passage of blood through the lungs, capable of producing a sufficient amount of hepatic congestion to derange the secretion of bile. In reply to *Dr Marcet's* remarks regarding the action of bile on the fatty acids of the chyme, *Dr Harley* stated that he had pointed out that action in an article, "On Digestion," published in the *Medico-Chirurgical Review*, either two or three years ago, and that he considered the presence of a large quantity of fat in the stools a most important diagnostic sign in jaundice, as it indicated that the pancreatic as well as the bile duct was occluded; and, moreover, pointed to the probable seat of the obstruction, which, in the great majority of such cases, would be found at the head of the pancreas itself.—*The Lancet*.

ON THE JAUNDICE OF CHILDREN. BY DR BOUCHUT.

A LITTLE girl, two years old, was lately in the Hospital Sainte Eugénie under the care of *M. Bouchut*, suffering from jaundice. This jaundice was symptomatic, not idiopathic, for in childhood primary jaundice is very rare; a fright at this time of life produces diarrhoea, chorea, or epilepsy, but not jaundice. On the 24th of May, the little patient was attacked with convulsions of an epileptiform character. When these subsided, fever, and diarrhoea with green dejections, made their appearance. Admitted into the hospital on the 6th of June there was as yet no jaundice, but it made its appearance on the evening of that day. On the 8th the jaundice was better marked; the urine treated with nitric acid gave a green precipitate, which became brown after a short time. The abdomen was swelled, the hepatic region tender, and the liver, increased in size, extended two fingerbreadths below the false ribs. There was in addition anorexia and heat of skin; the pulse was 110.

In this case, as is very frequent in children, the convulsions marked the occurrence of an acute inflammation, which extended from the intestine, its primitive seat, to the liver, and gave rise to occlusion of the common duct by swelling of the mucous membrane of this canal. This secondary hepatitis being mild, *M. Bouchut* scarcely treated it; the child being merely ordered baths and emollient tisanes. As a remedy for the enteritis, half a drachm of subnitrate of bismuth was given daily. On the 11th of June the stools were thicker, the inflammation was no longer acute, and the yellow colouration had diminished. A few days afterwards the child was convalescent.

The green alvine discharges in cases such as the above, were erroneously attributed by *Billard* to an alteration of the bile in the secreting organ. The green diarrhoea is really a sign of enteritis. The bile is only coloured green because it has been acted upon by the acid mucus of the intestine, which produces the same effect upon it as when the experiment is made of adding nitric acid. In the same way with infants at the breast who pass urine and feces at the same time, the latter, after being exposed for a short time to the air, lose their normal colour and became green, a change which must be attributed not to a pathological state, but simply to the natural acidity of the urine with which the feces have become mingled.

This case gave *M. Bouchut* the opportunity of making some general remarks on the jaundice of infants. According to him this condition, which is so common that it may almost be regarded as physiological, so long as it does not go beyond

certain limits, is still symptomatic of hepatitis, with this peculiarity, that in the new-born child hepatitis is commonly associated with an umbilical phlebitis consecutive to ligature of the cord. This phlebitis may exist in very different degrees. In private practice it is generally slight and often passes unobserved. In hospitals, on the contrary, the consequences of it may be more or less serious, and it may give rise to the formation of little abscesses in the liver and even in remote organs, such as the scrotum, the muscles, etc., as has been observed by M. Martin of Lyons. The mild form of jaundice which may be observed in about a third of all children, requires no treatment, or at most simple or aromatic tepid baths may be given three times a-day, while alcoholic frictions and the application of flannel are made to the belly. In the severe form, on the contrary, death generally occurs in the course of a few days, and art can do little to obviate the fatal result. Nevertheless, in these proportionally rare cases it may be well to try prolonged baths, oleaginous clysters, purgatives, cold water, and blisters.—*Journal de Médecine et de Chirurgie pratiques*, July 1862.

Part Fourth.

MEDICAL NEWS.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION XLI., 1861-2. MEETING IX.

Wednesday, 4th June 1862.—JAMES SPENCE, Esq., President of the Society, in the Chair.

I. CASE OF EMBOLIC SOFTENING OF THE BRAIN.

Dr Haldane showed a specimen of old softening of the corpus striatum. The subject of the observation was a woman 45 years of age, who had been a patient of Dr Gairdner's. On examining the brain an irregularly oval, somewhat depressed patch was noticed on the surface of the right corpus striatum. This patch was about a third of an inch in length, of a yellow colour, and was situated about the centre of the corpus striatum. When cut into it was found to extend for about the fifth of an inch into the nervous substance, and the affected portion was of a soft, pulpy consistence. Examined microscopically, the softened tissue was found to consist principally of granular matter, with some compound granular corpuscles, and a very few imperfect crystals of hæmatoidin. There was softening of a similar character, though to a much less extent, in the right optic thalamus. The branches of the middle cerebral artery in the Sylvian fissure, as well as the other vessels of the brain, were examined and found healthy. The heart was found enlarged, and the right side was distended with blood. The mitral orifice was much contracted, the edges of the valve were much thickened, and two or three very minute vegetations were adherent to them. The orifice just admitted the point of the forefinger, and its circumference was found to be 1·7 inch. The right ventricle was dilated and hypertrophied; the left was also enlarged, though to a less degree than the right. The heart weighed 18 ounces. Dr Haldane remarked that he thought it probable that the cause of the softening in the brain had been an embolic obstruction of a branch of the middle cerebral artery. Probably a minute vegetation, such as those found after death, had been washed from the margin of the mitral valve, and become impacted in an arterial branch in the fissure of Sylvius. Softening of the corresponding portion of nervous matter had taken place, but had not been so extensive as to cause death, although it

had probably given rise to well-marked paralysis, which, however, had been gradually recovered from. Dr Haldane thought that this view of the pathology of the case was much more probable than that the alteration in the corpus striatum had been caused by an apoplectic extravasation. There was neither an apoplectic cyst, nor a cicatrix, such as is found when the cyst has become absorbed. There was also less blood pigment than was usually met with when a lesion had been caused by hæmorrhagic extravasation. It was not surprising that no appearance of obstruction had been found in the cerebral vessels. Many months must have elapsed since the occurrence of the lesion, so that there had been abundance of time for the breaking down of the obstructing body, or for the absorption of the obstructed bloodvessel. Dr Haldane had no doubt that embolism had a most important part in the causation of many cerebral softenings which had formerly been ascribed indiscriminately to inflammation. Attention had hitherto been directed chiefly to those cases where a fatal result ensued; but there could be no question that recovery frequently took place. The cause of the softening appeared to be that a portion of the brain was suddenly deprived of its supply of blood, and that in consequence a breaking down, or acute degeneration of the cerebral substance, took place. Where this was extensive, death might ensue rapidly; but in the majority of cases (just as in apoplexy) the individual survived the occurrence, and the function of the parts might be to a considerable extent restored. Dr Haldane had lately examined the body of a man who died from disease of the heart, where there was found to be atrophy of the lower part of the right lobe of the cerebellum, which Dr H. had little doubt had been occasioned by embolic obstruction of one of the cerebellar arteries.

Dr Thomson (Perth) stated that the patient from whose brain Dr Haldane had obtained the preparation now shown to the Society had been sent by him to the Royal Infirmary from the General Prison, Perth, after a residence there of nine months. When she first came under his care, the certificate which accompanied her stated that she complained of deficient ability to use the left hand, but added that there was no apparent disease or want of power. While under Dr Thomson's observation swelling gradually came on, which was entirely confined to the left side of the body, and affected both the upper and lower extremities; there was also an indistinct want of locomotive power. The existence of disease of the heart had been recognised after her admission. Dr Thomson agreed with Dr Haldane in thinking that the case had originally been one of embolism, and that there had been a distinct attack of paralysis: it was unfortunate, therefore, that the early history of the case was unknown.

Dr W. T. Gairdner considered the facts narrated by Dr Thomson an important addition to the history of the case, and they entirely coincided with what he had himself observed. When the woman was admitted, the cardiac symptoms so predominated that the case was looked upon as one of heart disease. The functions of the nervous symptoms were carefully investigated, but there was no special symptom of lesion of the brain. There was no twisting of the mouth, no affection of the articulation, no mania, no delirium, but merely a remarkable obtuseness of the general mental powers, a condition which Dr Thomson no doubt frequently noticed in criminals. The fact of the swelling being confined to the left side of the body was remarkable, and, taken in connexion with the circumstance that the left pupil was contracted, had led Dr Gairdner to form the conjecture that in addition to disease of the heart there might be an aneurism of the aorta.

II. TYPHOID FEVER AND DYSENTERY.

Dr Haldane showed a portion of the small and the greater part of the large intestines of a man who had been under Dr Gairdner's care in the Royal Infirmary. The patient was admitted suffering from diarrhœa accompanied with the discharge of blood from the intestines. No satisfactory account could be obtained of the original character of the seizure, and there had been much difficulty in arriving at a satisfactory diagnosis. Treatment proved ineffectual,

and the patient gradually sank. On examination, the large intestine was found contracted, of the natural colour, but its coats were so much softened that they gave way in several places during removal. When laid open, the whole of the inner surface of the large intestine, from the cœcum to the rectum, was found to be the seat of extensive ulcerations, so that the mucous membrane was in great part destroyed. These ulcerations in general lay in a transverse direction across the gut, being separated by strips of tolerably healthy-looking mucous membrane; in many places, however, the ulcerations had run into one another, so that large irregular raw surfaces were left. There was no appearance of sloughing of the tissues nor any marked change of colour. In the lower part of the ilium were a good many small superficial ulcerations, varying from the size of a mustard seed to that of a split pea, most of which were situated on the side of the intestine corresponding to the insertion of the mesentery. In addition there were three ulcers of a different character. One of these, a third of an inch in length, was situated about an inch above the ilio-cœcal valve; its edges were sharp but somewhat undermined, its base was smooth and formed by the muscular coat of the intestine. Two other ulcers of a similar character were situated at the respective distances of four and sixteen inches from the end of the ilium. They were each of an oval form, about an inch in the long diameter, and had the same sharp undermined margins and smooth bases as the ulcer just described. The long diameter of the lower of these two was parallel, that of the upper was at right angles to the long axis of the intestine. There was no appearance of tubercle at any part of the intestine. The mesenteric glands were a little enlarged, but contained no deposit. All the other abdominal organs as well as the thoracic viscera were healthy. Dr Haldane remarked that the appearances just described were of a somewhat unusual character, and there had been some difficulty in determining the exact nature of the lesions. The appearance of the ulcerations of the large intestine at first suggested the idea of an unusually extensive tubercular affection; but this idea was negated by the entire absence of tubercle both from the intestine and from the lungs and other organs. The appearances were not those ordinarily met with in dysentery, at least in the stage which is accompanied with copious hæmorrhage. The three ulcerations found in the small intestine, of which a separate description had been given, presented all the characters of chronic typhoid ulcers. On the whole, Dr Haldane was of opinion that the case had been one of typhoid fever complicated with or followed by dysentery, a combination of lesions, which, though not common, was occasionally met with.

Dr W. T. Gairdner stated that the case had been of a most puzzling character. The idea of enteric fever had presented itself from the very first, as possibly accounting for the profuse hæmorrhage from the intestines, but on close investigation, it had been found impossible to reconcile this diagnosis with the ordinary history of typhoid fever. The symptoms appeared to have extended over two months, and to have begun with what was called "biliousness," and two months was long after the time when hæmorrhage usually occurred in typhoid fever. So severe was the hæmorrhage that it became very important to determine its cause. This, however, was found impossible. There were not the ordinary symptoms of dysentery; there was little or no pain or tenesmus, and the stools had not the usual mucous or slimy character. The man, it might be mentioned, had a fistula in ano, and, with the idea that this might be connected with the bleeding, he had been most carefully examined by Mr Spence, who satisfied himself that the blood did not come from the fistula. In fact, Dr Gairdner must confess that he had been baffled in attempting to discover the cause of the hæmorrhage. The obscurity in which the case was involved during life was, however, scarcely to be wondered at, for even at the post-mortem examination, it had been by no means easy to determine what was the exact character of the lesion of the intestines.

III. ANEURISM OF A BRANCH OF THE MIDDLE CEREBRAL ARTERY.

Dr Haldane stated that the patient, a boy of fourteen years of age, had been

admitted into the Infirmary, under the care of Dr Warburton Begbie. He had symptoms of heart disease, and presented the physical signs of obstructive disease of the aorta. He was dull and drowsy, and complained a good deal of headache. One day he had a well-marked apoplectic seizure, becoming suddenly unconscious, with stertorous breathing. There was no well-marked paralysis, but a general tremulousness of the muscular system. The patient died within a few hours from the occurrence of the attack. When the skull cap was removed the left cerebral hemisphere seemed of a purplish colour, owing to the presence of blood below the dura mater. On raising the dura mater a thin layer of blood lay over the left hemisphere below the arachnoid. The right hemisphere had a dry, somewhat flattened, appearance. On section, the blood on the left side was found to follow the pia mater to the bottom of the convolutions. A large hæmorrhagic extravasation was soon come upon; it was situated external to the left corpus striatum, and extended down almost to the base of the brain, and reached very nearly to the external surface of the organ. The extravasation consisted partly of fluid blood, partly of loose dark clots, one of which was about the size of a walnut. When the finger was introduced into the apoplectic cavity, a tolerably firm rounded body could be felt near its lower part, which felt like a smooth cancerous nodule. On examination, however, this body was found to be an aneurism arising from a branch of the left middle cerebral artery. It was rather larger than a field bean, and was nearly filled with blood, chiefly coagulated, but at one part firm and partly decolorised. A laceration, of more than an eighth of an inch in length, was found in the sac. One portion of the wall of the sac had a thickened atheromatous appearance. There was no disease of any of the other vessels at the base of the brain, or at any other part of the cerebral substance. On removing the heart, the aorta was found rather wider than natural. The semi-lunar valves were tested and found competent. On passing the finger up the vessel from the ventricle, a roughness and obstruction was felt. When the aorta was laid open, it was found that the three semi-lunar valves were thrown into one; there was scarcely any appearance of separation of the valves on the ventricular surface, while on the side of the vessel the remains of the septa were seen. One part of the valve was thickened and softened, and some small vegetations were adherent to it. There was the smallest trace of atheroma at the commencement of the aorta. Dr Haldane remarked that the lesion in this case was of considerable rarity, and that peculiar interest was attached to it from the concomitant circumstances. The existence of obstructive disease of the aorta had been recognised during life; and when the apoplectic symptoms supervened, it was presumed that they depended upon softening, due to embolic obstruction of a cerebral artery, and that the obstructing body was a vegetation which had been washed off one of the semi-lunar valves. Instead of this, however, an extensive hæmorrhagic extravasation was found in the brain, and as true apoplexy is very rare at so early an age as fourteen, the cerebral vessels were carefully examined and an aneurism was found.

IV. ANEURISM OF THE ANTERIOR COMMUNICATING ARTERY.

Dr John Struthers exhibited a specimen of aneurism of the anterior communicating artery of the brain. The aneurism was about the size of a small pea, and lay between the anterior cerebral arteries in front of the anterior communicating artery, from nearly the whole breadth of which it arose by a broad pedicle. The sack of the aneurism was smoothly continuous with the outer coat of the artery. A small probe passed from the left anterior cerebral artery, behind the aneurism, readily entered the sac through the opening, which was large, and showed the sac to be composed throughout of a thin membrane, thinner than the coats of the artery from which it sprang. The vertebral, basilar, and right carotid arteries presented some slight patches of disease, but the arteries in the neighbourhood of the aneurism appeared healthy. The preparation was from a female subject, æt. 80, certified as having died from gradual

decay, from which it was probable that there had been no marked cerebral symptoms.

It might be supposed that the anterior communicating artery should be predisposed to form an aneurism, from the pressure of two opposing currents. The posterior communicating artery is differently situated in this respect. The current in all arteries, of course, is determined by the direction of the greatest pressure at the time, but as the carotid end of the posterior communicating artery is generally, sometimes very much the larger, it is probable that the current is usually backwards. Besides, were two equal currents to enter the ends, they would find abundant relief in the outlet presented by the numerous branches which the posterior communicating artery gives off to the neighbouring grey matter. The anterior communicating artery, however, is mainly a bridge across a fissure, and is naturally equally filled from both ends. That this predicament, notwithstanding, in no way predisposes to the occurrence of dilatation, or of aneurism, is shown by the fact that it almost never occurs; and that no such cause operated in the production of the aneurism in the case now before the Society is shown by the co-existence of a variety of the arteries. On examination it will be seen that the right anterior cerebral behind the situation of the anterior communicating is very small, while both anterior cerebrals in front of the communicating, are of equal size, fed by a large left anterior cerebral; so that the anterior communicating in this case had acted merely as the channel by which the left anterior cerebral supplied blood to the right. The right anterior cerebral behind the communicating is smaller than a natural posterior communicating artery, and is therefore reduced to serve as a communicating artery. The right posterior communicating is rather smaller than usual, while the left is larger, forming more than half of the posterior cerebral. The left carotid is much larger than the right.

V. LACERATION OF MIDDLE MENINGEAL ARTERY.

Mr Edwards showed a preparation from a boy who had been killed by a cricket ball. Some boys were playing one evening in a field; a cricket ball was thrown up, and struck the deceased, a muscular lad, on the right temple. He staggered but did not lose consciousness, and complained little of pain. He came home about eight o'clock, and soon after became sick and vomited. *Mr Edwards* saw him at nine o'clock and ordered cold cloths to be applied to his head. Soon afterwards he became delirious, snatched off the cloths and tossed himself about; he slept occasionally, and in the intervals expressed great anxiety that the boy who had thrown the ball should not be blamed. He ceased to recognise his friends, became gradually comatose, and died three hours and a half after he received the blow. On post-mortem examination, there was no bruise on the head. On reflecting the scalp, there was a very scanty extravasation of blood below the temporal aponeurosis on the right side. There was no fracture of the external table of the bone, but a slight crack extended across the internal plate. The middle meningeal artery had run in a canal at this part, and a small piece of bone was broken off and the artery was completely torn across at this point. A clot, half the size of the fist, lay between the bone and the dura mater, and the corresponding portion of brain presented a distinctly bruised appearance. *Mr Edwards* remarked that the fragment of bone which had been broken off had no doubt wounded the artery, and that the blood had rushed out with such force that the vessel had been completely torn across.

VI. TRACHEOTOMY TUBE DROPPED INTO LEFT BRONCHUS.

Mr Spence mentioned the particulars of a rare accident which had come under his notice. A man had had tracheotomy performed several years ago by *Mr Edwards*, and had since worn a double tube. Yesterday, while riding on horseback, the rim of the tube which had been gradually wearing gave way, and it fell, as the man expressed it, "into his chest." The man went at once to *Mr Edwards*' house, but as that gentleman was from home, his assistant put in

another tube and sent him to the hospital, where he came under Mr Spence's care. When Mr Spence saw the patient he was breathing quite freely, and the sounds on auscultation were very much the same on the two sides of the chest. A probe was in the first instance passed down into the right bronchus (into which it was generally said that foreign bodies fell) but nothing was felt; it was then passed into the left bronchus and the tube was at once felt. An attempt was then made to extract the tube without enlarging the wound, but was unsuccessful. Chloroform was then administered, the opening was enlarged by cutting through two or three of the rings of the trachea, a pair of bent forceps was introduced, the tube was seized, drawn to the opening, and then extracted. Mr Spence observed that so far as he knew this was the only case of the kind, but it should teach cutlers to make their tubes in two lateral halves and then join them together; for when, as at present, the shield was fastened to the tube, the soldering must in course of time give way.

VII. HOMICIDAL MANIA.

Dr Yellowlees read a paper entitled "Homicidal Mania, a Biography; with Medico-Legal and Physiological comments." [*This paper will be found at page 105 of the present Number of this Journal.*]

The *President* stated that he perfectly remembered the individual whose case had been recorded. At that time he appeared to be rather good-tempered, and was very vain of his powers of music and singing, as well as of his literary abilities.

Dr Thomson (Perth) must express the pleasure with which he had listened to the very interesting case narrated by *Dr Yellowlees*, although he could not enter on so wide a subject, and one which presented so many ramifications as that of homicidal mania. One very important feature of homicidal mania, and one which involved a great medico-legal difficulty, had never yet been perfectly handled; he meant the circumstance that the individual might have induced the tendency to mania by habits of intoxication. This was a striking feature in the case of a young man who was tried at Edinburgh for the murder of his grandmother, was found to have been insane at the time of having committed the homicide charged, and was admitted into the General Prison, Perth, in February 1859. The man was a sailor, and returned home after a fit of hard drinking extended over several days. He complained of illness, was sleepless and terrified, and fancied that he was pursued by imaginary persons. Two days afterwards he stabbed his grandmother with a breakfast knife repeatedly in the throat. This individual had never shown the slightest symptom of insanity since the homicidal act. *Dr Thomson* might remark that out of fifteen cases of prisoners in confinement in the Perth prison for crimes ascribed to homicidal mania, seven or eight had never, since they came under his care, manifested anything but slight weakness of mind; in fact, they had appeared quite rational immediately after the act. It was a very serious question what was to be done with these persons. *Dr Thomson's* impression of the individual whose case had just been narrated, was rather different from what had been conveyed by *Dr Yellowlees*. *Dr Thomson* thought that, from the eccentricity of the individual, he must have had a peculiar original tendency to insanity, that in fact he must have been insane from an early period of life.

Dr Haldane had listened with much interest to the facts mentioned by *Dr Yellowlees*, in reference to the diminution in the size of the cranium in the case he had narrated. The brain naturally shrunk as life advanced, and as the absolute amount of the cranial contents could not vary, the diminished quantity of cerebral matter was made up for in various ways. There was an increased amount of serum in the cavity of the arachnoid and in the tissue of the brain; the ventricles became dilated and filled with serum; the membranes became thickened; and finally it was not unusual to find increased thickness of the cranial bones. It would appear, however, from *Dr Yellowlees's* case, that the size of the cranium might absolutely diminish, and thereby adapt itself to the diminished quantity of its contents. A point worthy of notice in that case

was, that though the brain was atrophied, the lateral ventricles were not increased in size and contained little fluid, which could not have been the case unless the capacity of the cranium had been diminished.

Dr John Struthers remarked that there was a general idea that in old age the bones of the skull became thinner; he had, however, in various cases been led to believe the contrary, and he was glad to find that *Dr Haldane* had made the same observation.

Dr W. T. Gairdner thought that in many cases the skull became thinner in old age; no doubt, it sometimes became thicker, but in these cases *Dr G.* thought that this was the result of disease, such as epilepsy, or of some constitutional taint. For the skull to become thin in old age was, in *Dr Gairdner's* opinion, the physiological change. There were two ways in which observations might be made regarding alterations in the size of the skull. *First*, Accurate measurements might be taken of the cranium of the same individuals at different periods of life. *Second*, Series of crania might be examined, sufficiently numerous; and when the ages of the subjects were known, *Dr Gairdner* believed that it would be found that diminution in the size of the skull would be found to be of more frequent occurrence than *Dr Yellowlees* supposed, that, in fact, it was a physiological condition.

Mr Benjamin Bell might mention, in reference to the question of change taking place in the dimensions of the cranium, that *Mr Kiernan* had once informed him that after a year spent in Paris, during which he had worked harder than at any former period, the hat that had fitted him on his arrival was far too small at the end of the time. *Mr Kiernan's* accuracy of observation was too well-known to allow it be supposed that there was any fallacy connected with this statement. If, therefore, the brain could increase in size in adult life, and determine a corresponding increase in the dimensions of the cranium, it was not surprising that a diminution in the size of the brain should lead to a diminution in the size of its bony case.

PROCEEDINGS OF THE EDINBURGH OBSTETRICAL SOCIETY.

SESSION XX.—MEETING XII.

June 12, 1861.—*Dr Keiller*, *President*, in the Chair.

I. CALCIFIED FIBROID TUMOUR OF THE UTERUS.

Dr Sidey showed a preparation of a uterus containing a large fibroid tumour, which he had removed from the body of a patient of about sixty years of age, who had died of cardiac disease resulting from rheumatism. When fresh, the tumour was about the size of a small cocoa-nut, and was covered over nearly the whole of its surface by a calcareous layer, one or two lines in thickness. The patient had shown no symptoms during life to lead to the suspicion that such a tumour existed; and no doubt it had been of very old standing. If the matter were investigated, perhaps it might be found that calcification and ossification of fibroid tumours of the uterus were more liable to occur in women of an arthritic diathesis, than in those who had never been subject to any form of gout or rheumatism.

II. PUERPERAL PHLEBITIS.

Dr Priddy gave the following history of a case which had recently come under his observation:—

On 27th April 1861, *Mrs S.*, æt. about 35, the mother of eight children, was confined of a healthy child, at the full time. She made a good recovery, and was out of doors, going about her usual pursuits, in ten days afterwards.

22d May.—Complains of sore throat, and a reddish rash has showed itself over the arms and breast.

The eruption disappeared, and the throat was well in two or three days.

29th.—To-day she is suffering from swelling and tenderness in the wrists and

arms, with slight febrile symptoms. In a few days she appeared to have quite recovered from this attack.

On different occasions I urged on her the necessity of exerting herself less and taking better care of herself, as I frequently found her washing, and otherwise exposing herself, so as to require to go to bed early in the forenoon from fatigue.

6th June.—I was again requested to see her. The pulse is extremely rapid; the tongue has a peculiar rough, brownish appearance; breathing is laborious, there is severe pain down the thighs, which are so sensitive as to be unable to bear being touched. She is almost constantly in a somnolent condition; but, on the slightest movement in the apartment, starts up for two or three minutes, quite conscious of what is going on around her, and then lapses into the same state. The countenance is anxious, and the face has assumed a bluish aspect, resembling that of Asiatic cholera, but with less of the leaden tint. The lochia disappeared several days ago.

8th.—All the symptoms are more intense; the abdomen has become much distended, and so tender as to cause her to scream if the bedclothes touch the parts. She died on the morning of the 9th June, six weeks after her accouchement.

Two days previous to the last severe attack she had been out in a heavy shower of rain, and allowed her clothes to remain on after her return home. At that time she was comparatively well, having apparently recovered from the swelling and sore throat. She was able to nurse the infant till two days before her death, and its health did not appear to have been influenced by the condition of the mother, and has since continued to thrive.

III. NEW CAUSE OF DEATH UNDER CHLOROFORM.

Dr G. W. Balfour read the following notes:—He remarked that as the public and the profession were indebted to an obstetric physician for the benefits of chloroform, the following peculiar case of death from chloroform, though strictly speaking a surgical one, could not be uninteresting to an obstetrical society. The case occurred during the Burmese war in 1853; and was related in a letter from John Balfour, Esq., D.I.G., then field-surgeon to the army in Burmah. A soldier received a gunshot wound through the upper part of the thigh, and secondary hæmorrhage repeatedly recurred. It was supposed that the profunda or one of its branches was injured, and it was determined to tie the femoral artery above and below the origin of the profunda;—this was done while the man was under chloroform. In the course of the operation the man, who had had his dinner previously, became sick and vomited. He subsequently sank and shortly died from exhaustion, as was supposed. On examination of the body, the profunda was found cut across by the ball, and a false aneurism formed at the seat of injury, and *the trachea was found filled with vomited matters.* *Dr Balfour* remarked that, though an extreme case, this was but a sample of one very common source of danger in the use of chloroform, arising from its anæsthetic properties interfering with the natural actions of the nervous system, and that the anæmic condition of the patient probably had its influence in favouring the fatal result, anæmia being one of the conditions most commonly found in all fatal cases following the using of chloroform; in which, however, by far the most common and constant post-mortem appearance was a collapsed condition of the heart, a condition rarely, if ever, found after death from any other cause, and favouring the supposition that death in most of such cases is caused by direct paralysis of that organ, a supposition further favoured by the fact, that death from chloroform has generally occurred when the patients were in the sitting or half-lying posture, when of course syncope was more likely to occur than when wholly recumbent, as well as by its remarkable safety in midwifery, in which we had a most efficient and delicate test of its action on the hollow involuntary muscles in its action on the uterine pains. *Dr Balfour* also directed attention to a statement of Stanelli, that bubbles of gas had been seen escaping from the veins and arteries of those operated on under chloroform, and to the possibility, therefore, of chloroform forming gaseous bubbles within the vascular

system, interfering with the heart's action, and thus proving a merely *mechanical* cause of death. He also pointed out that Dr Casper of Berlin had distinctly made out the possibility of chronic chloroform poisoning, which might end fatally after hours, days, or even weeks; and that this, though a subject of extreme difficulty, was one which deserved most careful consideration, particularly in regard to cases of death after childbirth, in which chloroform had been employed, and where, from the apparent absence of any sufficient cause, the death had usually been referred to toxæmia. In midwifery, we have a most efficient test of the saturation of the patient's system with chloroform in its action on the uterine pains, and as its interference with the continuance of these is a signal for its partial withdrawal, there is, we may almost say, a positive immunity from sudden death from chloroform during labour, because the heart's action continues wholly unaffected long after anæsthetics have produced complete cessation of the labour pains. But the long continuance of labour generally, and the amount of chloroform administered during its continuance, is most favourable to the production of a state of chronic poisoning, particularly where the patient was originally anæmic, or has become so by flooding subsequent to parturition; and in the latter case, the loss of a very small amount of blood, the vital stimulant, might very readily prove fatal where the heart was already half paralyzed. The subject seemed to be one deserving of the most careful consideration.

Remarks were made by various members as to the inconvenience and occasional danger of administering chloroform to patients who had been taking food shortly before; and cases in point were adduced. It had been observed also that the same patient required a larger dose of chloroform after a meal than she did when she was anæsthetized fasting.

Dr James Sidey thought the practice of administering chloroform to patients in the sitting posture ought to be avoided as much as possible, as they were much more liable to syncope when sitting upright than when they were placed horizontally. With regard to *Dr Balfour's* case, he thought that there ought to have been some more decided symptoms of suffocation exhibited if the entrance of food into the trachea had been the cause of the patient's death.

Dr Thomas G. Balfour stated, in reply to *Dr Sidey's* last remark, that he had once been called to see a healthy, plump, little child, who had gone to bed quite well, and had been found dead in the morning. The child had taken a hearty meal of porridge in the evening, and had shown no symptoms that could afford any clue as to the cause of its sudden death. On opening the trachea, however, a quantity of its food was found lodged there, the starchy nature of which was proved by the usual iodine test.

Dr Keiller thought it a matter of the utmost importance to determine clearly what ought to be done in cases where patients were threatened with syncope whilst under the influence of an anæsthetic. He had had a case in his ward where, whilst chloroform was being administered, respiration ceased, and the patient seemed almost dead. The heart continued to beat, however, and by keeping up forced respiration for a time, and dashing cold water on the chest and face, whilst the patient lay supine, she was completely recovered.

Mr Prillie, many years ago, when practising in the county of Durham, had a case where the patient, on whom he was performing some slight operation, fainted under the use of chloroform, and was resuscitated by such simple measures as those employed by *Dr Keiller*. On reviving his patient, a clergyman, argued that he ought to have been dosed with brandy during his syncope, but was soon satisfied to the contrary when a day or two after he read in the newspapers an account of the case of a boy at Newcastle who was threatened with syncope when anæsthetized, and who died whilst an attempt was being made to pour some brandy down his throat.

IV. PUERPERAL TETANUS.

Dr Maclaren, of Lasswade, contributed the following notes:—*Mrs W.*, æt. 35, a spare, poorly-nourished woman, the mother of five children, after bleed-

ing for about eight days, sent for me on the 2d April 1861. I found the vagina filled with clots, a three-months fœtus, and a half-detached chorion. These were removed, the passage stuffed with pieces of sponge, and a binder applied around the abdomen. The loss of blood had been very considerable, as was evidenced by the saturated condition of the bed, and numerous articles of wearing apparel, the blanched countenance, and the weak, thready, and rapid pulse. This was her first miscarriage. I ordered her an opiate draught, and arrowroot, with wine, for diet. Twenty-four hours afterwards the plugs were taken out and the patient ordered to inject daily a breakfast-cupful of tepid water, and to take $\mathfrak{z}\text{i}$ liq. ergotæ.

4th.—Bowels costive; no pain over uterus; pulse stronger. Ordered ol. ricini, $\mathfrak{z}\text{j}$, and beef-tea.

Up till April 10th she improved rapidly, feeling stronger, eating heartily, and keeping free from pain. I then left for England, leaving her under Mr Phipps' care.

12th.—She complained of an uneasy sensation in the muscles of the neck, and had some difficulty in swallowing. Ordered warm formentations to the part, and some laxative medicine. She was unable to take the latter, as the attempt caused her so much pain in the throat.

On the 13th she had a natural motion, her symptoms remaining unaltered.

14th.—This morning, I again saw her. The muscles at the back part of the neck and the masseters were rigid. The teeth were closely locked, but by a strong effort could be separated nearly a quarter of an inch. Deglutition was almost impossible; and in order to show the act she forced the saliva through the clenched teeth. The skin was moist, and the pulse 120, but soft.

The nature of the complaint was now very apparent. I ordered an enema of the following drugs to be repeated every four hours:—Tinct. opii. gtt. xv.; tinct. cannab. indic. $\mathfrak{z}\text{ss}$.; mucilaginis $\mathfrak{z}\text{i}$. During the day she had three well-marked paroxysms of trismus, with slight opisthotonos, which, however, I did not see, although immediately afterwards I was present. The breathing then was hurried, the pulse 130, and the skin covered with a clammy moisture.

At 12 P.M.—Dr Smith recommended that the upper part of the spinal column should be painted with acet. lyttæ, a poultice applied for two hours, and the part to be afterwards kept covered with a cloth soaked in sol. mur. morph.

15th April.—No paroxysms occurred during the night; but the trismus and difficult deglutition continued unabated. To alleviate the thirst and choking sensation, she was ordered yesterday to place small pieces of ice in the mouth, but as it failed to relieve any of the symptoms she begged to be allowed to discontinue doing so. The enema was to be repeated every three hours.

2 P.M.—Has had, since morning, one very violent attack of opisthotonos, and is now very weak. The muscles of expression (more especially the levator menti and the levator labii superioris alæque nasi) are in continual action, and give the countenance a peculiar sardonic grin.

In order to administer nourishment the bowels were acted upon by an enema, and thereafter a wineglassful of beef-tea and two drachms of wine injected.

From 5 P.M. till 10 P.M. the spasms were nearly continual, and very severe. Afterwards, till 7 A.M. (16th) they abated a little; and at 7½ A.M. she died.

17th.—Dr J. Smith and I examined the uterus, the brain, and upper part of spinal column, but could detect no lesion.

Mr Sidey had never in all the course of his experience met with a case of tetanus in the puerperal female; but he had seen the disease supervene in a patient in whom the menses had been suddenly checked, and in that instance it proved fatal in twenty-four hours.

Dr Keiller thought the Society were much indebted to Dr Maclaren for his interesting communication. Instances of recovery from puerperal tetanus were very rare, and but one case had come under his own observation, where the patient got well. She was threatened with abortion at an early stage of pregnancy, and for several days the uterus had been making efforts to discharge its contents, so that at last it was found necessary to extract the ovum arti-

ficially, an operation for which some force required to be applied. Tetanus came on very violently, and he (Dr Keiller) thought for a time that the patient was about to succumb. But under large doses of opium the spasms subsided, and the patient finally recovered.

Dr James Sidey stated that he had seen a case of nearly a similar description, where many forms of opiates were tried in vain, till at last the patient was quieted, and eventually recovered by the use of Battley's solution.

Mr Pridie said that he had published several years ago the history of a case of traumatic tetanus, where the patient had recovered under the use of tobacco. Since that time he had had five other cases, all of which had been treated in the same way, with the general result that, out of the six cases, two recovered, and the rest died.

V. ERGOT OF RYE.

A lengthened discussion took place with regard to the use of ergot of rye in labour, in which Drs Keiller, Sidey, Figg, etc., took part.

ELECTION OF DR LANKESTER AS CORONER FOR MIDDLESEX.

THE election of Dr Lankester as coroner for Central Middlesex is an event upon which the public, even more than the medical profession or the successful candidate, may be congratulated. The contest and the result have proved beyond dispute the truth of our assertion that the freeholders of Middlesex were deeply convinced that, if the office of coroner were to be maintained in usefulness and authority, it must be held by a medical man. For more than twenty years numerous freeholders had daily witnessed how by the application of medical science the causes of obscure deaths were cleared up, how unjust suspicions were dispelled, and how subtle crime had been detected. The career of Mr Wakley was one long and continuous demonstration of the truth of the great principle upon which he first challenged the votes of the electors. They first put their trust in the man, swayed by the ardour of his convictions, and by the impetuous eloquence with which he set them forth. They afterwards learned to cherish those convictions as their own, by the daily observation of the admirable efficiency of their medical coroner. It would have been strange indeed, if, with this signal proof of the justness of the selection they had made in the person of Mr Wakley, the freeholders of Middlesex should not have strenuously supported the medical candidate in the contest to fill up the vacancy he had left. The issue of this contest offers also a most gratifying proof of the legitimate influence which the medical profession has acquired over public opinion. Dr Lankester fairly acknowledges that his success is greatly to be ascribed to the active and liberal manner in which he has been supported by his brethren. It may be truly said, that almost every medical practitioner has had, and most, we believe, have used, some opportunity of advocating the cause of the medical candidate; by conversation, by discussion, by canvassing, the medical practitioners of the county have largely contributed to the formation of public opinion. There is not one amongst us who could not cite examples of justice miscarrying, of crime being encouraged, of the cause of death being left in obscurity—all for want of medical knowledge on the part of the coroner. A deep conviction exists amongst the public, that in the due administration of the coroner's court lies the most effectual protection of life against criminal machinations, and the best security for the just and humane government of our asylums, workhouses, and other public institutions.

The legal candidate vainly boasted that, "single-handed, he would beat the whole medical profession." Had his cause been one that rested upon reason and right, no doubt he would have beaten. But something more than electioneering tactics and experience was required. Argument and facts wielded by the medical profession were too strong. This union he could not beat.

And never again, we trust, after this formal ratification of the principle in the metropolitan county will any other than a medical man be elected to the office of coroner. The example will have authority and weight throughout the country.—*The Lancet*.

REMUNERATION OF THE EDINBURGH SURGEON OF POLICE.

WE are glad to learn that a motion has been made at the Town-Council Board to increase the salary of the Surgeon of Police. The duties attaching to this position are numerous, and entail much responsibility. The surgeon is required to attend at the main office every forenoon and evening; to visit all persons reported as injured or assaulted, and report on the nature of the injuries for the guidance of the magistrate; to attend all injured parties whose cases are undergoing investigation, with a view to giving evidence on the trials; to visit and certify regarding the insane who come under the notice of the police; to visit all parties and witnesses reported as unable to attend in court; to attend all the officers and men who are hurt or reported sick, also the officers and men of the cleansing, lighting, and fire-engine departments when hurt in the discharge of their duty, and to keep a record of the case of each in a register; to examine all applicants for employment, and report as to their health and strength; to make examinations of bodies in all cases of sudden death under suspicious circumstances, and furnish written reports as to the probable cause of death; to give written reports in all cases coming within the limits of the Police Act, when such are required by the authorities; to be in the office during the sittings of the Police Court; to inspect the cells and receiving rooms twice a-day, and direct the medical treatment and diet of the prisoners; to visit and report on the ventilation, cleanliness, and other conditions of health of the district offices; to attend at the office during the night of certain holidays, and on other occasions when required, and to give immediate attendance on receiving notice of disturbances and fires. He has also duties to perform as a medical officer of health, such as to inspect and give medical evidence in cases of suspected diseased meat tried in the Police Court; to make examinations and reports regarding alleged nuisances and unhealthy lodging-houses; and "generally to perform such other duties as shall be required by the Commissioners of Police from time to time." Besides, he must live within half a mile of the main office, and must not allow his private practice to interfere with his public duties, all of which he must discharge personally and not by deputy.

Such is the long catalogue of the duties of the Surgeon of Police, which we have gleaned from the more detailed printed regulations; and when it is considered that the duty is constant and onerous, that it involves grave responsibility in respect to the institution of public prosecutions, and that, both from its nature and from its occupying the greater part of the surgeon's time, it is incompatible with the cultivation of private practice,—our readers will expect to hear that the salary is a handsome one, sufficient to maintain a man of that education and skill which the public interest requires, and will scarcely credit us when we state that the public of Edinburgh has expected all this for a paltry half-guinea a-day! We need hardly point out, that over and above the ordinary work of the position, it is a matter of moment alike for economy and for the purposes of justice, to have the services of a man skilled in medical jurisprudence, that it depends on him whether unnecessary prosecutions shall be avoided, for which the public would have to pay, or, on the other hand, whether the ends of justice shall be attained by the prompt application of that skill as a medical jurist which special study and experience can alone supply. The present Surgeon of Police has now for a series of years discharged the duties in a manner which at once reflects credit on himself, and has raised the status of the appointment to the position which it deserves to occupy, and he has been successful in cultivating that scientific and practical skill in the various departments of medical jurisprudence, which is so essential for the ready and thorough discharge of the

duties of the position. Why the remuneration has not long ere now been increased we are at a loss to know, and we regret to observe that the present motion for increase goes only the length of making the salary £250 a-year. That only such remuneration should have been given for such an amount and kind of duty is not creditable to the public of Edinburgh, and disparages the medical profession in the person of one of its members. It is creditable to the profession to notice that the motion is made by one of the medical members of the Town-Council, and we trust that it will meet with the hearty approval of the Board.

FEMALE PHYSICIANS.

THE College of Physicians of Edinburgh and the Senate of the University of London have each gone near to introduce a sisterhood of medical practitioners. We confess that we should have found ourselves embarrassed in that fair company, and congratulate the profession on escaping from a predicament which would have promised sore trials to their gallantry. The ladies have fought hard to make this a question of principle, and place it on the "rights of woman" platform. In reality, it is far more a question of capability, and a matter of detail. Let us grant that women have as much "right" as men to become physicians and to practise medicine. How are the Colleges, in the present state of things, to grant them diplomas? Patients, these ladies should remember, are of two sexes, male and female. Are the ladies prepared, as we are, to take under their care nine-tenths of the male diseases? Or, if they are prepared to do so, how are they to acquire the necessary knowledge? We know of no hospital at present at which the ladies would be admitted to study these diseases in mixed classes with male students. Supposing that exclusive opportunities of studying were provided by the professors, we doubt whether such patients could be found to parade their maladies or their frailties before female eyes. At present there is no possibility of any lady acquiring such a practical knowledge of general surgical and medical practice as would justify any of the Colleges or Universities in giving her a diploma to practise. If these ladies desire only to practise midwifery, there is hardly any necessity for such a license, for the certificates from the various lying-in institutions supply that deficiency. If they desire to practise only amongst women and children, the question of creating a special degree for that purpose would be a very difficult one, for it is hardly possible to conceive a curriculum which should qualify for that more extended duty being gone through by any lady at our existing hospitals. Our Colleges strictly regulate, in the case of male students, the course of study to be pursued; and they have a right to do the same for female students. There is no objection to the admission of females to practise among women and children, if they provide the means of qualifying themselves to do so. Even the question of treating male children will often present indecencies and difficulties; and the partition of families into halves—one moiety attended by the female physician, and the other by the male—exhibits features of apparent absurdity and inconvenience.—*The Lancet*.

THE NEW PHARMACOPŒIA.

SEVERAL difficulties having arisen with regard to the new Pharmacopœia, parliamentary interference became necessary to remove them. A bill has accordingly been brought in by the Lord President, consisting of two clauses. The first provides that the General Council of Medical Education and Registration shall be deemed to be and to have been, from the date of its first establishment, a corporate body, with a capacity to hold lands for the purposes of the Medical Act. The second directs that the British Pharmacopœia, when published, shall for all purposes be substituted for the existing Pharmacopœias, and that any Act of Parliament, order in Council, or custom relating to any of these, shall be deemed, after the publication of the British Pharmacopœia, to refer to it.

SURGICAL INSTRUMENTS AT THE GREAT EXHIBITION.

AT the grand ceremonial at the International Exhibition on the 11th of July, the award of the jury on the surgical instruments and appliances was presented to the Duke of Cambridge by Professor Syme, its chairman. Mr Syme was accompanied by Mr Luke, President of the College of Surgeons of England, Mr Thomas Bell, F.R.S., Dr Farr, and Mr Seymour Haden. It is honourable to Scotland that its metropolis should have furnished the representative of the profession of surgery on this memorable occasion.

PUBLICATIONS RECEIVED.

- Arbuckle,—Hernia Trusses. By Joseph Arbuckle, F.R.S.S.A. Edinburgh, 1862.
- Ashton,—Prolapsus, Fistula in Ano, and Hæmorrhoidal Affections. By T. J. Ashton, Surgeon, etc. London, 1862.
- Bayes,—Medical Terrorism in 1862. By William Bayes, M.D., etc. London, 1862.
- Braithwaite,—Retrospect of Medicine. Edited by W. Braithwaite, M.D., etc., and James Braithwaite, M.D. Vol. xiv. London, June 1862.
- Brown,—On Ovarian Dropsy. By J. Baker Brown, F.R.C.S., etc. London, 1862.
- Byrne,—Pelvic Hæmatocœle. By J. Byrne, M.D., etc. New York, 1862.
- Cornish,—Typhoid Fever in the Madras Presidency.
- Earle,—Mammary Signs of Pregnancy and of Recent Delivery. By J. Lumley Earle, M.D., etc. London, 1862.
- Kramer,—Disease of the Ear. By William Kramer, M.D. London, 1862.
- Lee,—Mentone, and an Account of San Remo. By Edwin Lee, M.D., etc. London, 1862.
- Lee,—Vichy and its Mineral Springs. By Edwin Lee, M.D., etc. London, 1862.
- Milton,—The Treatment of Gonorrhœa without Specifics. By J. L. Milton. London, 1862.
- Ranking and Radcliffe,—Half-Yearly Abstract of the Medical Sciences. Edited by W. H. Ranking, M.D., etc., and C. B. Radcliffe, M.D., etc. Vol. xxxv. London, June 1862.
- Ryan,—Infanticide: its Law, Prevalence, Prevention, and History. By W. B. Ryan, M.D. (London), etc. London, 1862.
- Scott,—A Handbook of Volumetrical Analysis. By Robert H. Scott, M.A., etc. London, 1862.
- Smee,—General Debility and Defective Nutrition. By Alfred Smee, F.R.S., etc. Second Edition. London, 1862.
- Smith,—Handbook of Surgical Operations. By Stephen Smith, M.D. New York, 1862.
- Townley,—Parturition without Pain. By James Townley, M.R.C.P. Edin., etc. London, 1862.
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PERIODICALS RECEIVED.

- Births, Deaths, and Marriages, Monthly Return of, June 1862.
- Boston Medical and Surgical Journal,—June 12, 19, 26. July 3, 1862.
- British Medical Journal,—June 28, July 5, 12, 19. London, 1862.
- British and Foreign Medico-Chirurgical Review,—July. London, 1862.
- Bulletin Général de Thérapeutique,—May 15, 30, June 15. Paris, 1862.
- Dublin Medical Press,—June 25, July 2, 7, 16, 23, 1862.
- Gazette des Hôpitaux, June 24, 26, 28, July 1, 3, 5, 8, 10, 12, 15, 17, 19, Paris, 1862.
- Gazette Hebdomadaire de Médecine,—June 27, July 4. Paris, 1862.
- Gazette Médicale de Paris,—June 28, July 5, 1862.
- Gazette Médicale d'Orient,—May, June. Constantinople, 1862.
- Glasgow Medical Journal,—July 1860.
- Health, etc., of Manchester,—June 1862.
- Henke's Zeitschrift für die Staatsarzneikunde,—Part 2. Erlangen, 1862.
- Journal de Médecine et de Chirurgie,—July. Paris, 1862.
- Madras Quarterly Journal of Medical Science,—No. 8. April 1862.
- Medical Critic and Psychological Journal,—No. 7, July. London, 1862.
- Medical Times and Gazette,—June 28, July 5, 12, 19. London, 1862.
- Nederlandsch Tijdschrift voor Geneeskunde,—Nos. 1 to 13. Amsterdam, 1862.
- Revue de Thérapeutique Medico-Chirurgicale,—July 1, 15. Paris, 1862.
- Schweizerische Zeitschrift für Heilkunde,—Nos. 1 and 2. Berne, 1862.

Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Graduation Address to the Gentlemen who obtained the Degree of M.D. in the University of Edinburgh, 1st August 1862, delivered by* PROFESSOR LAYCOCK, *Promoter.*

GENTLEMEN,—The academic ceremonial in which you have taken so prominent, so important, and, I may add, so solemn a part, is of high antiquity. In the collection of ancient Greek classics known as the Works of Hippocrates, and which date from 400 to 500 years before the Christian era, there is extant the form of oath taken by the Greek student of that time, when about to enter the medical profession. He swore by all that was sacred to him that he would reckon him who taught him his art equally dear to him as his parents, and look upon his children as his own brothers; that he would impart a knowledge of medicine according to the laws laid down for medical education; that, in practice, he would have solely in view the benefit of his patients; that with purity and holiness he would pass his life and practise his art; and that he would be just, true, faithful, and discreet in his conduct; and he concluded,—“While I continue to keep this oath inviolate, may it be granted to me to enjoy life and the practice of the art, respected by men in all times; but, should I trespass and violate this oath, may the reverse be my lot.” With what ceremonies such oath was administered and taken is not on record, but we may be sure that the spectacle-loving Greek would not fail to surround the young postulant in medicine with such accessories as would impress the imagination, and be worthy the dignity of medical art; for the very next document in this ancient collection of Greek books, termed “The Law,” opens with the declaration that “Medicine is of all the arts the most noble.”

Each of you, gentlemen, in accordance with so ancient and time-honoured a custom, has made a solemn vow on your admission to the ranks of the medical profession, and to the privileges and duties of medical graduates of this University. You have raised your right hand towards heaven in presence of this venerable and learned assembly, vowing, like the ancient Greek, a vow of filial obedience and support to your *Alma Mater*, of purity and holiness in your

professional career, and of justice and discretion towards the sick who may seek your aid. I need not say that this solemn procedure is no unmeaning ceremony with you, any more than with the ancient Greek; but I may venture to remind you that, as Christians, you have a higher incentive to purity and holiness of life than he had, in the example of your Divine Master, that great Physician who went about healing all manner of diseases. Such an example, gentlemen, ought to be more influential on your conduct than any precepts I can give you, and therefore with your own hearts and consciences I leave the fulfilment of this part of your vow. But in respect to the duties you owe to your *Alma Mater*, I will venture to express a few words of counsel, inasmuch as, in consequence of recent changes both in her curricula and government and in those of rival universities, her reputation and prosperity will depend more than ever upon her graduates. I cannot doubt your anxiety to fulfil those duties: all that I shall attempt, therefore, will be to mark out in some degree their limits.

I think it will be admitted that they centre upon the academic position of medicine, in which faculty you are graduates; but this in its turn is determined by the objects for which the University was founded and is now maintained. Now, those objects may be said, in brief, to be the advancement of religion and learning in Scotland. Doubtless our University is imperial and cosmopolitan, inasmuch as it receives and cordially welcomes students from all parts of the United Kingdom, from the widely-scattered colonies of the empire, and from all regions of the world, whether civilized or uncivilized; it asks no questions as to country, race, or creed; it places no restrictions upon students in general other than it places upon the Scottish-bred youth; and it values learning and industry in all alike. Still, it is emphatically the national and metropolitan University of Scotland, and therefore its principal business is the advancement of religion and learning amongst the people of Scotland. Now, this object is not a sentimental, but a practical object. Hence this University is practical in its methods; and, with this in view, is especially devoted to the training of the Scottish youth for those learned professions with which rests the application of the principles of religion and learning to the needs of society and the arts of life. The advancement of the science of life, and of its applications to human welfare, is the allotted business of the faculty of medicine; and this, therefore, is the academic position of medicine as a science and an art. We must guard, however, against the narrow notion that medicine exists only for itself. While, on the one hand, your duties as practitioners are included within your higher duties as citizens—to which they are indeed subservient—so your duties as doctors of the faculty of medicine are subservient to your higher duties as *cives* of this great academical republic. Now, these extend beyond the faculty of medicine. The science of life applied to human welfare has important relations to all the

other faculties, for both its foundations and its superstructure are coextensive with all human knowledge. There are, therefore, two modes in which, as medical graduates, you can aid in the attainment of the objects for which this University was founded and is maintained—namely, the promotion of the study of medicine in especial, and the application of medical science to the culture of the other liberal professions. For academic ends the one mode is as important as the other, although for professional ends the first-mentioned is that which demands our chief consideration. To this I will therefore more especially direct your attention.

You are aware that under the authority of the Scottish Universities Act of 1858 a number of Scottish noblemen and gentlemen have devoted much time and thought to a reorganization of our universities. It is very plain that the learned public is not inclined to admit that the work of reformation is complete. Some theoretical minds, indeed, are already labouring with symmetrical schemes for further changes. Under any circumstances, it is not to be desired that the supporters of university education should be content with our present condition, however much improved; so that it will not be altogether a useless labour if we endeavour to discover what principles should guide us in carrying on the work of academic development as regards the profession and science of medicine.

I apprehend that we shall all aim at sound medical culture. Now, this implies two things—namely, competent teachers, with sufficient means and encouragement for teaching; and sufficient curricula and plans of study for the student. I will not now venture to give an opinion whether in teaching we should adopt the professorial or the tutorial method, but it will be useful to know what a tutor is, and what a professor, in the academic body. The professor, I apprehend, is a teacher who, starting from the knowledge already acquired in his department, continually adds to it or corrects it by new researches. He leads the way to “fresh fields and pastures new” of science and art; by both precept and example he incites the student to thought and inquiry; and thus he not only maintains the reputation of his university by his own labours, but widens its fame as a school by the reputation of his scholars. The tutor, I apprehend, occupies, relatively, a less advanced position in the academic ranks. His duty is to communicate positive knowledge (or what is held to be such) to the student, who is at the university not simply to acquire knowledge and be subject to mental discipline, but to acquire knowledge to the end that he may pass those academic examinations which are intended to test the amount of his acquirements. Hence the tutor has to follow and digest the result of original researches, rather than engage in them himself, to the end that they may be presented in a convenient form to the student for a degree. Now, this kind of teacher already exists, and is popularly known as a “grinder,” and it may be worthy of consideration whether a recognised academic

position should not be given to this class. For my own part, I should be glad to encourage academic tuition in my own department in every practicable way. Unfortunately, two difficulties meet us in the outset—namely, the want of time, and the want of money on the part of the student. Still, these are not so insuperable that the attempt to provide this kind of tutorial teaching should not be made.

And this leads me to another aspect of the question. The tutorial system is most developed in the English universities, where it has sprung up in connexion with those numerous and wealthy colleges and halls in which domestic supervision and tutorial teaching are combined and made conjointly subservient to university education and honours. Now, I do not say that that system should be adopted here, for it seems doubtful whether we can have an effective tutorial system without more or less of domestic supervision. It may be alleged with great truth that we have gone on very well hitherto without either the one or the other; but when we look at the efforts the English universities are making to extend their influence, and especially to develop their medical faculties by means of their collegiate system, it can hardly be thought prudent for this University to repose on its laurels. These were won at a time when there was no University of London, and when Oxford and Cambridge were so defective in their organization for the teaching of the medical sciences that they could hardly be said to possess medical faculties at all. Hence, part of the past success of our medical faculty must be attributed to the absence of rivalry. This advantage, however, is not likely to remain with us; for while the English universities have already so far developed the teaching of the fundamental sciences of medicine that the remuneration and means of research provided for professors are most ample, they are adapting their curricula to the education of the general practitioner. Cambridge has resolved, like this University, to grant a degree in surgery; Dublin grants it already; Oxford and Durham will not be slow to follow these examples. They thus affirm a principle upon which this University has long acted, and to which it owes much of its success—namely, the unity of medicine. The result will doubtless be, that that effete system of specialism formerly in vogue in those universities, by which the so-called “pure” physician was produced, and which was an effectual hindrance to all progress in medicine, will be broken down. Then, on the other hand, the colleges, with a catholicity and a liberality worthy of all praise, have thrown open a large number of scholarships to competition by all comers. It would be difficult to state briefly the annual pecuniary value of these in the four universities of Oxford, Cambridge, Durham, and Dublin; but in Cambridge alone it amounts to £26,000, distributed over 450 scholarships, of the average value of £57 each, and these are exclusive of the university scholarships and of college fellowships soon to be thrown open,

which largely exceed the scholarships in annual value. Now, the number of students at Cambridge is about the same as at Edinburgh, but the chances of the student securing what is equivalent to a maintenance, besides the advantages of domestic and tutorial supervision and an honourable academic position, are enormously in favour of Cambridge. Edinburgh has no college scholarships whatever to offer to competition; while of the University bursaries and scholarships, there are only seventy-three attainable by students in the faculty of arts, of the average annual value of £17, 15s. Those limited to the faculty of theology—the number being thirty, and the average value £8, 11s.—are not within the reach of students of medicine; in short, only five are not connected with any particular faculty, and only two open to students of medicine, in competition, however, with those of theology and law. Further, these honours and rewards are not open to all comers, being for the most part limited to poor students, or to students bearing a certain surname, or to natives of Scotland, or of certain counties in Scotland. Now, I do not say that diligent and successful instruction may not do much for our University; but, certainly, all other things being equal, the sister universities will offer much greater attractions in the form of honours and rewards, and in this respect at least we shall work at an enormous disadvantage. I have nothing whatever to say against the plans of these rival bodies. Every man who values science must rejoice at their newly developed energy and liberality. I wish heartily they may be so entirely successful in their efforts to advance medical education that not many years shall elapse before the majority of general practitioners in England will hold a university degree. And none of us would regret if the aspiring youth of Scotland made continual raids and forays into these noble institutions, with the most abundant success. Nevertheless, we cannot but entertain a hope that the people of Scotland, who during the last twenty years have freely expended several millions in the development and maintenance of their ecclesiastical institutions, will now turn their attention to learning and science, and see to it that their national universities shall not be behind those of the sister kingdoms, or even of the colonies, in the encouragement given to academic culture. Sectarian differences need not and ought not to interfere with this. Religion and learning walk hand in hand, like twin sisters; they are mutually helpful, flourishing and failing in sympathy. Without religion, learning is apt to develop that pride which goeth before destruction; without learning, as all history teaches, religion degenerates into superstition. As, therefore, religion and learning are the objects of this University, its friends can justly claim from the people of Scotland, of whatever sect, a share of that support they have hitherto accorded in the interests of religion almost exclusively to ecclesiastical institutions. I doubt not, time will work wonders in this direction; in the meanwhile, the friends of learning might take immediate steps

to establish a college here. My own observations have led me to the conclusion, that English and colonial students resort to Edinburgh every year, by whom a collegiate home and tutorial guidance would be highly appreciated; and that, in fact, these are in sufficient numbers to make one such college self-supporting. Then, again, for another class an intermediate organization for tutorial teaching might be effected by the students themselves, whereby, independently of the common dwelling which a college implies, a common table and tutors might be secured, together with library and classrooms. The members of the Royal Medical Society possess these requisites already, and are therefore in a position to develop such a tutorial system at once. And possibly, albeit less readily, other students' societies in arts might attain the same end. These associations of students excite to self-culture; they are thus amongst the most effectual means for developing and training the faculties which the University possesses, and as to which, I incline to think, it is as yet unrivalled. And it would therefore be in entire accordance with the spirit that maintains them if a tutorial system were grafted upon them, under professorial guidance.

Another question has been raised—namely, that there shall be freedom of teaching the medical sciences in the University. Now, there is, and has been for many years past, the most unrestricted freedom of medical teaching in Edinburgh. Any one of you may commence as teachers or lecturers on any department of medical science or art you may choose, on compliance with certain formalities; and we know that there is a body of private teachers in Edinburgh second to the private teachers of no other university, whether we consider their attainments, zeal, or industry. But this system is not satisfactory to those who advocate what they term freedom of teaching, because under that phrase they really advocate an entirely different thing—namely, freedom of being taught. The ordinances of the University require not only that courses of lectures shall be attended, but that a certain proportion shall be attended under professors of the University; the advocates of the so-called freedom of teaching require this restriction to be removed, so that the student may obtain his knowledge where he pleases. Plausible arguments have been advanced in favour of this proposal; but, in considering them, it is to be carefully remembered that it involves the most fundamental questions in education. If positive knowledge and examinations to test the attainment of it by the student be the sole end and aim of university culture, then there is no need whatever of curricula or professors; nor, indeed, of a university in the strict sense of the term. For such ends nothing more is needed than schools and a board of examiners, such as the University of London offers, at which, if the requisite knowledge be forthcoming, it is of no moment—indeed, it is an impertinence to inquire—where it is got.

But positive knowledge is not the sole aim of university culture,

nor even the principal aim. The collision of mind with mind in your Royal Medical, Hunterian, and other societies, the tone of thought, the manners, the sentiments of your professors, and all the multifarious influences which university life exercises over the youthful mind, go far to form those intellectual and social habits which distinguish the university-bred man. In especial, they impart that tolerant, manly tone of thought and inquiry, without which the scholar, however high his attainments, is little better than a Chinese pedant. The University of London was founded to meet the alleged sectarianism of the English universities. It has succeeded in this object; but then it also encourages the establishment of other sectarian colleges by the working of the very principle upon which it is founded. For, having no regard to those higher ends of university culture, and aiming solely at the attainment of positive knowledge by the student, it allows this to be acquired at institutions where sectarian prejudices may be imbibed to the utmost. When, therefore, Lord Palmerston refused the grant of a royal charter to the Roman-catholic University of Dublin on these grounds, he carried out the true idea of a university, which can only be a national institution, and must, as such, repudiate sectarian principles and prejudices. The English universities are rapidly changing from sectarian to national universities on this very principle; and this is the established character of our own. So long, therefore, as this principle of national university culture guides our arrangements, so long the private lecturer must be content to work and wait and bide his time, until by experience in teaching, and a reputation for scientific and original research acquired by honest industry, he is qualified to take his place amongst the seniors and leaders of the academic hierarchy, as others have done before him. This, the common fate of every professional junior, is surely no special hardship for the young lecturer. I trust that in thus maintaining a principle of academic organization in opposition to that by which the University of London is governed, I shall not be understood as undervaluing that institution in any way. I speak only of principles, and of what they lead to in practice. And I must in fairness say, that if its constitution leads necessarily to sectarian schools and methods of teaching, it is catholic enough to include the students of this or any other of the Scottish universities and medical schools, who have as free access to its boards of examiners and its academic honours as to their own.

Our medical curriculum or plan of study has had so much serious and careful consideration that it would appear almost impertinent in me to refer to it. After many preliminary discussions in the Medical Faculty, it was brought before the *Senatus Academicus* for approval and revisal. It was next submitted to the Scottish Universities' Commissioners; and when it had passed that critical tribunal with such amendments as seemed to the Commissioners fit, it was again revised on two occasions, at the instance of the

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medical colleges,—first in Edinburgh before the Commissioners, and then in London before the Committee of Education of Her Majesty's Most Honourable Privy Council. But the opponents of the plan of study were not content with all these inquiries and revisals. They therefore brought it before another tribunal of great importance and dignity, mainly composed, however, of their own representatives. You are all well aware that in the United Kingdom medical education is divided between the metropolitan medical corporations (with their medical schools) and the universities, and is regulated by the General Council of Medical Education, composed for the most part of representatives of those educating bodies. Now, it was in this Council that objections to our plan of medical education were again brought forward, and the opposition took a peculiar form. Inasmuch as the Scottish universities stand alone amongst the universities of the United Kingdom in requiring no degree in arts from candidates for graduation in medicine, it was resolved by the Council that no university of the United Kingdom ought to confer a degree in medicine or surgery, whether that of doctor, bachelor, or master, unless the candidate had previously graduated in arts, or passed all the examinations required for the bachelorship in arts, or the equivalent to those required for a degree in arts. Now, this, the present rule in all other universities except the Scottish, by no means entails any serious expenditure of time or money upon medical students in them, because they not only confer the degree of bachelor of arts upon comparatively easy terms, but also make such exceptions in the case of students of medicine seeking that degree, that the examinations and requirements for it are hardly more searching and extensive than for the medical preliminary and general examinations in arts in this University. And for this reason I doubt whether we do our medical students justice in withholding from them an academic title in arts. But we confer no degree of bachelor of arts—only that of master. Now, our course of study for this degree is of such a high character that it can hardly be completed in less than four years; and as the curriculum for the degrees of bachelor of medicine and master of surgery requires also four years, it follows that, if the recommendation of the Medical Council were adopted, no student could attain to a degree in medicine in this University until he had completed eight years of study, and acquired a higher education in arts than is demanded of the candidate for a degree in any other university. The adoption of that resolution would therefore place our candidates at a serious disadvantage as compared with those of the other universities and of the several corporations; and those who now come to graduate here from England and the colonies, attracted by our system, would either go to the English and Irish universities for their degree, or else would seek the licenses and diplomas of the medical corporations. As to our Scottish youth, it is certain that the increased cost in time and money would debar the majority

from a degree in their own universities, or even in the English ; so that they would no longer be able to enter upon the medical profession with those advantages which attach to an academic title, and which have long been the valuable birthright of the Scottish youth educated to medicine.

Such, then, being the probable effects of such an entire change in the Scottish system of University medical education, what are the grounds of expediency or necessity which would warrant the adoption of this recommendation of the other educating bodies? They debate in secret, and we cannot therefore know the arguments which influenced the opinion of the Medical Council. But as it is the system of education of the Scottish universities alone which is aimed at by the resolution, the only conceivably valid argument in its favour is, that our graduates generally have been hitherto defective in all that constitutes able and learned physicians ; this, however, I need hardly say, is simply the reverse of being true. I think I may venture to affirm, without fear of contradiction, that no university in the United Kingdom has sent out so numerous and so able a body of physicians as this. In the absence of any published reports, we may conclude that the Council was influenced by views of the usual theoretical kind.

By a large class of educationists, it is held, without much or any inquiry, that philosophical, classical, and mathematical learning so fits a youth for medical studies and practice, that the more learned he is the better for the public ; while, at the same time, his personal character is also so influenced, that he is thus transmuted into both a scholar and a gentleman. But, in truth, these notions are not well founded. It is a fact that wealth, social position, and a good general education are often combined in the same individual ; but they are by no means necessarily associated. Learning, without that finish which intercourse with the world gives, never made a gentleman, any more than wealth ; its tendency is rather to make a pedant. The notion is really traditional. When universities first arose in the so-called dark ages, personal freedom and education went together ; no serf or slave could be taught. Hence the phrase "liberal education" distinguished a university education. And from a similar state of things has arisen the notion that all students for the liberal professions should start from the same level of an education in arts—that, in short, there should be a kind of academic symmetry in the education of professional men. Such, indeed, has been the traditional procedure up to a recent period in all universities. Students have generally "gone out" of arts into the other faculties, and doubtless at one period it was a necessary plan of study. For when modern European civilisation began to arise out of the ruins of the ancient social organization, the languages and dialects of the Germans, Saxons, and Northmen were incapable of expressing the principles and details of the sciences and the systems of philosophy which were transmitted from the

Greeks and Romans; so that at that epoch Latin was necessarily the language of learned, scientific, and professional men. All true literature, whether of religion, science, or art, was in Latin; all laws, all academic lectures, orations, and examinations—nay, the Bible and Common Prayer Book—were in Latin. Custom maintained this use of the Latin tongue, even when the necessity for it ceased, especially amongst the ecclesiastics, who are, by the very nature of their studies, the farthest removed from science. When the Bible was first translated into English by Wycliff, it was charged against him by the ecclesiastics that he had thereby desecrated it; and when Astin, a follower of Wycliff, was publicly accused of heresy, and defended himself in English, he was ordered by the Archbishop of Canterbury to defend himself in Latin. Latin was the language of legal and state documents in England until the reign of Henry III. The Church of Rome, indeed, still uses the Latin office; and in the more ecclesiastical and conservative seats of learning there survive Latin statutes, treatises, orations, and sermons. Nay, if you, gentlemen, had been candidates for a degree in this University thirty years ago, your examination would have been conducted in Latin; and to quote Molière, who saw this weak point in academic discipline more than a century ago, your examiners might have said to each of you—“*Bené bené respondisti.*”

Latin is, however, almost wholly discarded in this University for academic uses, for the obvious reason that it is a cumbrous, inefficient, and impractical method of conducting academic business. Nor is a critical knowledge of Greek and Latin required for the purposes of medical study, or as a part of the training of the medical practitioner. Classical studies, if too exclusively followed, are, in fact, more hurtful than helpful in this respect, because they develop more especially those mental faculties which are busied rather with abstract ideas and the meanings of words than with things and the realities of everyday life. The physician must be a close observer and a prompt doer to fulfil his part in life well; consequently the sooner, as a student, his faculties of observation and action are developed and trained the better. Hence mere book lore has always been found to be associated with speculative habits of thought and action to the exclusion of practice. It is the first of Bacon's “distempers of learning.”

The best education for the physician is that which evolves the philosophical and the practical equally, so that the tendency to one shall balance the tendency to the other. Hence the philosophical study of the natural sciences on which medicine rests as a science and art is a far more effective training for the medical profession than the critical study of Latin and Greek. Other portions of the extended curriculum of the faculty of arts come under the same category. Plato and Aristotle have a high historical value; and to the physician a knowledge of them, as well as of other ancient

writers, is a graceful accomplishment. But for the business of modern science, and especially of modern medicine, the philosophies of modern Europe are incalculably more valuable than those of ancient Greece. Formal logic, too, is rather for the theologian and the lawyer who have to deal with authoritative propositions and established dogmas than for the physician whose business is with the order of nature. To him far more important is the philosophy of induction and the logic of common sense. I will say nothing of the higher mathematics, for I believe none is so hardy as to assert that a knowledge of the calculus is necessary to the proper study or practice of medicine.

Now, in all this defence of our new medical curriculum as it stands in relation to arts, I do not advocate a neglect of the subjects contained in the art curriculum, or of classical or philosophical culture. The medical student is examined in arts by appointed examiners, and I venture to say that the amount of general knowledge thus required is quite equal to that formerly demanded for the degree of master of arts in Oxford or Cambridge, or even for the bachelor of arts now; and it is strongly recommended that intending graduates in medicine should be graduates in arts. Undoubtedly Latin is the very foundation of our modern European languages in all that relates to the sciences and the arts, and to be able to read a Latin author is an essential preliminary to the study of medicine. But, then, that amount of classical knowledge being attained which will facilitate the study of English and other languages of modern Europe, why require the student to be able to make Latin and Greek verses to the neglect of these, when it is plain that, as means of scientific intercourse and development, they have at least an equal value with the dead languages. There is perhaps no higher accomplishment for any man, nor one more generally useful, than a thorough knowledge of the English language and literature; yet it is notorious that English youth trained under this high classical system leave school and college unable to write their mother-tongue correctly. Now, the whole gist and scope of the Edinburgh curriculum is to afford the means of self-culture to the student. Your studies do not end with this day's proceedings; on the contrary, you only join a numerous band of men who are hardworking students.

It is becoming more and more a conviction with thinking men that in every kind of learning self-culture is the best of all, and that the foundations of this should be laid in a sound knowledge of languages, and especially of Latin and Greek. To this end our burgh schools, if conducted according to the method of the High School and Academy here, ought to be amply sufficient. With such a training as is there given, a youth of sixteen ought to be able to proceed to the study of any department of science or learning at the universities; and certainly would not only be fitted for the study of the natural sciences and medicine proper, but would be

able to continue his scientific, literary, or philosophical inquiries in after life with ease and advantage. None of you, indeed, should neglect the study of Latin and Greek, nor the perusal of those ancient works which are ever fresh to the cultivated mind. Nor do professional labours and studies preclude the highest attainments in classical literature. Dr Mason Good was originally a London surgeon, who, by self-culture, became one of the greatest philologists of the day. He translated Lucretius as he rode about the streets of London. And my lamented friend, the late Dr Adams of Banchory, in Aberdeenshire, was a country practitioner, who added a critical knowledge of Greek to other accomplishments, and whose translations of the Greek medical classics, made amidst the toils and hindrances of country practice, reflect the highest credit on Scottish learning. No, gentlemen, in repudiating pedantry we do not repudiate the highest scholarship; but this must be the result of self-culture, and not of slavish toil in youth, to the exclusion of all else.

To complete the arguments in favour of our medical curriculum as it stands in relation to arts, I ought to show how seriously the development of the medical profession itself has been hindered by a too exclusive devotion of the medical student to the dead languages, and how great services have been rendered by this University in adopting a more practical course. In England the too learned physician became a specialist, and medicine and medical practitioners were in consequence so divided in study, practice, and organization, that the natural unity of the profession was destroyed, and the conflicting grades of practitioners set up. But in Edinburgh this natural unity was, and is, maintained; and you, gentlemen, will pass into the world equal in academic rank, but free to study and practise in whatever department of medical art your natural tastes and talents may lead you to adopt. It is highly gratifying to observe how much progress this principle has made in England of late years, and that it is becoming more and more clear what evils the contrary principle has inflicted on the profession. We will not draw upon history for illustrations of those evils; rather let us hope that a new era is dawning upon us. The College of Physicians of London, with most praiseworthy zeal, is about to abandon that unhappy principle which excluded surgery from the studies and practice of physicians, while, simultaneously, an academical position has been given to surgical science in the English universities. These two changes foreshadow, I confidently think, a corresponding change in medical organization. One step alone is needed. When, by combination, the medical and surgical colleges have carried out the principle of the natural unity of the profession, the organization of the profession will be in harmony with the medical faculties of all the universities, and in England, as here, the motto will be—*E pluribus una.*

I have left myself little time for any remarks on the academic position of medicine in relation to the other faculties and profes-

sions; but this is the less to be regretted, because public opinion is more and more declaring itself in favour of the study of physiology, or rather biology, as a branch of general education. That which is taught in our ragged or industrial schools must sooner or later find its way into our universities. The repression of crime and the advancement of morals will be all the more effective, in proportion as our magistrates, judges, lawyers, and divines become acquainted with the subtle and never-ceasing action of the corporeal on the spiritual part of human nature. If not so ornamental, far more useful will such knowledge be than the most intimate acquaintance with Homer or Plato. Two professions not hitherto developed by academic training will ere long be brought within the sphere of university discipline. The military and naval officer and the schoolmaster are daily becoming of greater importance as science perfects alike the arts of war and of peace. Each has to educate, discipline, develop the mental powers; each has to govern and train. To both a knowledge of the physiological side of human nature, and of all that constitutes and maintains the *mens sana in corpore sano* is essential for success. Now, this knowledge medicine, in its wider applications to psychology and hygiene, can alone supply. Efforts have been made already to bring the military profession within our national republic of letters, and the scholastic profession is already so connected with the universities of this country, that the more complete academic training of the Scottish schoolmaster can only be considered a matter of time and detail. At present the great question of religious teaching stops the way—each religious sect, with few exceptions, claiming to educate its own children in its own dogmas and ceremonies. This is the natural result of earnestness in religion; what a man believes to be true he would have his children and neighbours to believe with him. The fact is overlooked that if each succeeding generation had held to the faith of its fathers there would have been no sects, nor even Christians—a sufficient proof that, however natural the desire to perpetuate beliefs may be, it never can be accomplished. While, therefore, we naturally teach our children what we believe to be the truth, we should remember not only that we may be wrong on some points of faith, but that we most certainly are wrong. And out of this humble but too true estimate of ourselves will arise the conviction that we have a higher duty than that of teaching what we believe to be true—namely, to imbue the rising intellect with an abiding love of truth, and so to train the faculties that it may be as able as it is willing to discover truth. This is incompatible, however, with a sedulous pre-occupation of the mind by opinions and beliefs. I know, indeed, no better inheritance for a man, or a surer help to advancement and happiness, than the love of truth and the capacity to seek after it. It is available alike for scientific progress, for material advantages, and for happiness in the highest and best sense. On the contrary, the mind which is loaded from youth

upwards with prejudices lags miserably behind the age and time, and grows up stunted and deformed. Free exercise of the mental faculties is as necessary to mental power and symmetry, as freedom of the limbs to corporeal beauty. This truth all mental science teaches, and some of you cannot but know the reason why.

And now, gentlemen, as a conclusion to these humble and imperfect remarks on the academic practice of medicine, and our duties to this University, let me offer you the most cordial congratulations of the Medical Faculty on your promotion this day. You have chosen a profession which makes you free to seek after truth, and which opens the whole world of nature to your research. All success attend your labours, whether they be professional or scientific; and if pecuniary success should not be your lot, still may you find in the practice of your profession at least a modest competency, and in the search after its truths an abounding wealth of happiness.

ARTICLE II.—*On the Disinfecting Treatment of Typhus, Eruptive and Enteric.* By JOHN HJALTELIN, M.D., Inspecting Medical Officer of Iceland.

IT has fallen to my lot to witness and treat one of the most dreadful epidemics of typhus that ever visited Iceland. The disease began in the northern part of this island during the winter of 1857–58, and was thence apparently communicated by contagion to the eastern, western, and southern districts of the country. During the winter of 1857 about ninety cases of this fever came under my observation, and it presented sometimes the character of exanthematous typhus, and sometimes of typhoid or “typhus abdominalis;” but although the sickness abated in the following summer, it again appeared in the autumn of 1858, and raged during the whole winter of 1859, and did not even cease in the summer months of that year, but continued its ravages through all the seasons of 1859 and 1860. In those two years no less than 900 cases came under my treatment, out of a population of about 10,000 inhabitants, although of this number there were many patients that I had no time to register. When the fever broke out in a farm or cottage, it generally attacked one person after the other, until most of the inmates of the house were infected; and it very often happened that strangers stopping in a house thus infected, contracted the disease. It was evident, therefore, that it was highly contagious.

In the beginning of 1860, the same fever was very often accompanied by malignant dysentery; and at this time also, when by far the greater number of the infected were suffering from typhoid fever, Asiatic cholera made its appearance, and was accompanied by rice-water evacuations and cramps, but happily, it was only

sporadic, and did not spread by contagion. During the last winter, 1860–61, the typhus fever was decreasing, although it still displayed its former malignity, and was attended, especially in the eastern part of this country, by great mortality. In some parishes of this part of Iceland, one-tenth of the inhabitants fell victims to the disease, a catastrophe which seems attributable to there having been an entire deficiency of medical men, and medical aid. The same phenomenon was observed in many other parts of our country, so that we have a strong argument against those who are of opinion that medical aid has very small influence on the mortality of malignant fevers.

In the last winter mentioned, about 122 cases of typhus and typhoid fever came under my treatment, and although the disease was becoming more and more sporadic, it still preserved the same characters of malignity and contagion as it had shown in former years. In the beginning of the spring, cases of malignant cholera seemed to gain ground, and were generally more common than the typhus itself, but the disease did not spread, and was limited to some fishermen's huts.

From this short review it will be seen, that, during the years 1858–61, this island was visited by three most malignant diseases,—viz., typhus and typhoid fever, dysentery, and sporadic cholera; happily, however, this last disease did not spread by contagion, although a few cases had all the symptoms of true Asiatic cholera, and in a few days terminated fatally. In respect to the probable causes of these malignant diseases during the aforesaid period, I shall now make the following remarks.

In the years 1856 and 1857, an epizootic of a special kind visited this island. This epizootic was nothing else but common sheep-scab; but, unhappily, there arose a prodigious dispute about its origin, and about what was to be done. Some, who believed that the disease was imported with some sheep from Scotland, desired to cut the matter short by killing all the infected sheep; while others (and amongst these were the veterinarians and myself) proposed that an attempt should be made to cure them, believing that the disease resulted only from the close packing of the poor animals in the winter, when generally little more than two square feet are allotted to each. But although the veterinarian or curing party were able to prove that their principles would lead to the happiest results, they were, nevertheless, compelled to succumb to their antagonists,—the slaughtering theory (having been practised in the former century when the same disease made its appearance) had, in spite of its sad result, been inherited by the people, and was destined finally to prevail. It was supported also by the governors of the island; accordingly, no less than 200,000 sheep, many of which were quite sound, fell victims to the adoption of that stupid and barbarous theory.

In the beginning of this madness—for it was really a slaughter-

ing madness—I had foretold that this proceeding would most likely lead to fearful consequences, especially on account of the great masses of meat heaped together in the small storehouses that are commonly attached to the Icelandic farm, the single apartment of which is used as a parlour, diningroom, and bedroom. I supposed—and experience showed that I was right—that my countrymen's uncleanness, and their bad method of salting meat, would lead to the most dangerous consequences; and that so protracted a deprivation of sheepmilk, butter, and cheese, might not only be attended by a deficiency of healthy and nourishing diet, but also give rise to famine.

The sheep killed amounted in number to about one-third part of those contained in the island, and were intended to supply twelve months' nourishment to about 10,000 men. So convinced was I of the injurious consequences of this foolish enterprise that I wrote to the Board of the Sanitary College at Copenhagen, predicting what would happen if the Sheriffs of this country—who were its authors and executors—were not to be deterred from its prosecution. The Danish government upon this enjoined them to desist; the order, however, arrived too late, the slaughter having been already executed during the autumn of 1857, and the following winter.

Meantime, my predictions were realized. People coming from the country where large stores of salt provisions existed in great abundance, informed me that the odour of rotten meat was in many houses insupportable; they declared that they could neither stay nor sleep in them, and a short time afterwards I heard that typhus and typhoid fever had broken out in several parishes of the north, and both these diseases were subsequently extended by contagion to the southern districts.

During the winter the peasants came down from the highland districts to the fishing places near Reykjavik, and the surrounding districts. In many of these persons the malady already existed in its latent form. On arrival, they sickened and spread the fever in the fisher cabins, which were the more susceptible to its influence, as they had been overcrowded during the winter of 1858. From this time the disease advanced from hut to hut, until the majority of them were infected by its virulence; the most crowded huts were of course infected first and most severely; but by and by the better houses became infected also, towards the end of the winter of 1858. The mercury sank to 4° below zero, Fahrenheit, and continued there for several weeks. It was very remarkable to see how the typhus was for a time arrested by the severe cold, but re-excited when the temperature grew milder. This fresh outbreak continued until the end of May, at which period it ceased or abated, to reappear in autumn.

Before proceeding to my treatment of this epidemic, I will in a few words describe the ordinary symptoms exhibited in each form of the fever,—viz., in the typhus and the typhoid.

I. *Typhus*.

The symptoms of the first stage were generally,—diminished muscular strength, giddiness, aching in the back and limbs, weariness, unrefreshing sleep interrupted by unpleasant dreams, loss of appetite, constipated bowels, intercurring congestions of the head, accompanied by flushing of the face, sometimes followed by epistaxis, or, in females, by slight menorrhagia, white tongue with some flow of saliva during sleep, thirst, a certain amount of cough, and more or less oppression about the epigastric region. This stage generally lasted a week, and occasionally twelve days, although it was frequently only of from three to five days' duration.

The second stage of the disease generally commenced with a succession of mild or severe shivering fits, with more or less distinctly marked symptoms of catarrh, inducing, perhaps, the expectation of rheumatic or catarrhal fever. At the same time, cough, variable in its degree of acuteness, was also present; the respiration was hurried and often interrupted by sighs; the skin was hot and dry; the pulse very frequent, ranging from 100 to 130 in a minute; the tongue covered with yellow or white fur. The preceding symptoms were usually attended by severe cephalalgia, throbbing in the temple, suffusion of the eyes, and flushing of the face. Early in this stage the muscular strength was much weakened, the patient being unable not only to leave his bed, but even to raise himself from the pillow. When this stage had lasted for two or three days, the catarrhal symptoms, such as the cough and the oppression of the breast, became generally aggravated, and with them the fever itself. At this time there was almost constantly seen an eruption of the skin, which consisted of small roundish or irregular spots, of a dingy red colour, closely crowded together, and somewhat resembling flea-bites, but without a dark point in the centre. This eruption commonly appeared first on the chest and on the neck, but afterwards on the shoulders, forearms, and legs. When this eruption was of a bluish or dark colour, and formed large irregular spots, I was always pretty sure that the case was a malignant one; but when the spots were small and of a brownish or dingy red hue, the prognosis was far more favourable. After the outbreak of this eruption, the feverish symptoms were for a short time alleviated, the pulse was not quite so frequent, and the catarrhal symptoms, with the oppression of the chest, subsided; but this seeming alleviation was of brief continuance, as this stage in two or three days commonly passed into the third stage, or "*stadium nervosum*" of the German physicians. Some patients did not survive this stage, but succumbed to supervening phrenitis or pulmonary apoplexy. In those who survived, this stage was not unfrequently protracted to five or seven days, and during this period the amount of urea in the urine was in the majority of cases augmented.

The third stage was characterized by nervous symptoms; the

patient became debilitated, his muscular strength was quite gone, and he sank into a state of continual delirium, stupor, or coma, from which he could hardly be awakened by cold water affusion, and, even when this could be effected, he soon relapsed into stupor. The other symptoms in this stage were convulsions, hiccough, involuntary evacuations of fæces and urine, trembling of hands and legs, spasmodic and difficult deglutition, and sometimes complete stranguria, which could be removed only by the catheter. Persons who did not survive this stage died of nervous exhaustion, especially from paralysis of the respiratory nerves; dry, darkly furred tongue, weak and accelerated pulse, cold extremities and facies hippocratica, announced approaching death.

The duration of this stage was generally limited to four or perhaps seven days, and urea was found in large quantities in the urine.

The fourth, or critical stage began on the ninth, eleventh, fourteenth, or seventeenth day, and the following were the most remarkable symptoms: When the patient one or another night had seemed to be in extreme danger, a change took place. Instead of sinking into stupor or coma, the patient (sometimes after prolonged insomnia) fell into a sound and refreshing sleep of six, eight, ten, or even twelve hours; the skin, formerly dry and pale, became soft and moist; and when the patient awoke he would answer questions sensibly, although his voice was still weak and trembling. He seldom, however, recollected what had happened to him, or where he had been during his disease. After some more sound sleep and slight perspiration the patient gained in strength, his pulse beat more naturally, his appetite improved, the dark sordes on his lips and tongue disappeared, and he gradually entered the convalescent or fifth stage. His recovery, however, was often interfered with, or retarded by some fatal accidents, bedsores, parotitis, or gangrene of the lungs, which also sometimes occurred in the earlier stages of the disease. Many convalescents regained their health with a temporary loss of their hair.

From the preceding short description of our Icelandic typhus it will be seen that this disease greatly resembles the typhus exanthematicus or contagiosus of Dr Hildenbrand, which is admirably treated of in his well-known monograph, "*Ueber den ansteckenden Typhus*" (Wien, 1810), and which may still be looked upon as one of our most celebrated works on this subject.

II. *Enteric Typhus or Typhoid Fever.*

About a third part of all those affected in the aforesaid epidemic in our country suffered from enteric typhus, which also may conveniently, as is generally done by the German physicians, be divided into several stages, according to the well-marked progress of its course. The first, otherwise named the premonitory or latent stage, was well marked by the gastric symptoms. The patients

were generally first affected by dyspepsia; they had slow or deficient appetite; complained of some pain in the epigastric region, and had a heavy or dragging sensation in the hypogastrium. Sometimes, moreover, they felt pain about the liver or spleen; they were generally costive, or complained of slight mucous diarrhœa, and recurring pain below the umbilicus; their tongue was covered with a white or greenish yellow fur, and they often suffered from nausea and vomiting of a dirty green-coloured fluid. Besides this they complained of headache, especially in the forehead, pain about the back, and intermittent weariness and uneasiness in the extremities. Their muscular strength was in this stage rarely impaired, but they told me that they easily grew fatigued, and were liable to be attacked by palpitation if they laboured or walked for some hours uninterruptedly. They often looked pale and melancholy, and feared that some dangerous or malignant disease was impending. Their skin was unusually dry, and it was with great difficulty that they perspired, even when taking exercise.

This stage now and then lasted for a week or more, but generally not longer than twelve days.

The second stage always commenced with a more or less violent fever, followed by painful headache, especially in the forehead, hard and frequent pulse, dry and hot skin, flushed face, and suffusion of the eyes; on pressing the hand more or less uneasiness was felt in the right ilium, and in many cases there was a painful sensation similarly complained of in the hepatic and splenic regions. Although costiveness in this stage was a common symptom, mucous diarrhœa also occurred during its entire prevalence. Most of my patients had sleepless and restless nights, or their short and unrefreshing sleep was interrupted by unpleasant dreams and hallucinations of hearing and vision. Many drunkards were in this stage seized with delirium tremens, which often terminated in death, and was, therefore, a most dangerous complication. Some young ladies of sensitive temperament fell into a continued "delirium nervosum," which in some respects resembled delirium tremens, although the cause was evidently quite different. Other patients fell into a phrenitic delirium, which was in a very few cases terminated by apoplexy.

The duration of this stage was generally between five and seven days.

The third stage (the "stadium nervosum" of the German physicians) was characterized by extreme weakness, and by nervous symptoms. The patient was quite unable to rise, and slipped from the pillow towards the foot of the bed; his voice was scarcely audible, and he swallowed with great difficulty; the tongue was dark and tremulous, and was protruded with hesitation; and the hands and limbs trembled also. Some patients, moreover, were constantly delirious, and made efforts to leave their bed, but, on attempting to do so, sank down instantly on the pillow. Most of

region, oleaginous frictions were found serviceable. If diarrhœa occurred, rice-water or decoction of salep was exhibited, and especial reliance was placed upon musk in those comparatively rare cases which were complicated by nervous derangement indicated by spasm or hiccough. If retention of urine supervened—and this was a frequent consequence—the catheter was employed. Subsequent affections, such as gangrenous ulcers, erythema, parotitis, and gangrene of the lungs were treated upon general principles, and a moderate use of wine was allowed during convalescence.

Some patients who were thus treated had sometimes before my arrival taken emetics or purgatives, or had been bled, but they were immediately cautioned against the repetition of similar indiscretions.

I must now describe my active or positive treatment, but before doing so must make some remarks on the arguments which guided my mind in its adoption. For this, however, it will be necessary to go back a little, and show how my reflections were matured.

After having read much of what had been written on eruptive and enteric typhus during the last twenty years by the best writers in England, America, France, Germany, and Scandinavia, I perceived that the widest discrepancy of opinion existed in reference to both theory and treatment. Many of our best physicians are of opinion that typhus fever originates from a specific poison, and some of them believe that this poison is of the same kind in the enteric as in the eruptive form of the disease. This opinion has in Germany been maintained by Professor Canstatt, one of the most learned medical writers on the Continent; it has, moreover, found its advocates in England, as may be seen from several articles in *The Lancet* and other medical journals of Great Britain, although there are some writers who maintain a different opinion,—among others Dr Stephen Ward (see his "Clinical Illustrations of Diseases of the Abdominal Viscera," alluded to in *The Lancet* of 1858, pp. 310 and 359). I can scarcely think, however, that physicians who support the latter opinion have witnessed any epidemic of eruptive fever upon a large scale; had they done so, it could not have escaped their observation that at least patients attacked by the eruptive form of typhus are at the same time more or less affected with diseases of the abdominal viscera, especially the colon and ileum, and that in many cases of this nature—indeed, more frequently than is generally believed—there evidently exists an affection of the mucous membrane of the ileum near its termination in the cœcum. I still remember an extensive epidemic of eruptive typhus that broke out near Copenhagen in the year 1838, the patients of which were brought into the so-called common wards of the hospital in the town, and treated by Professor Wendt, one of the principal physicians. I was then, as a young practitioner, directing especial attention to the course of that disease, and I observed in the bodies of some of those who died considerable enlargement of Peyer's glands. In our epidemic I found, on the contrary, that a great many patients

affected with eruptive typhus displayed preternatural sensibility in the right iliac region, although from other symptoms there could be no doubt as to the true nature of the disease. We know, moreover, that the physicians of Paris have witnessed epidemics of this disease, in which gastro-intestinal irritation exists in the majority of cases, and that they have regarded this state of the intestinal canal as the essential cause of the disease. I must here add that, in the many hundreds of cases that have fallen under my cognizance during the last years, I have found very few patients entirely exempt from congestion of the mucous membrane of the colon and the ileum.

Dr Stephen Ward says, in his very interesting "Clinical Illustrations of the Diseases of the Abdominal Viscera," "I can quite conceive the possibility of the specific exciting poisons of typhus and enteric fever co-existing in any given locality, and, as a consequence, the possibility of one or two individuals residing in such locality being affected with typhus, the other with enteric fever, or of one individual being affected with the two diseases at once." He then says, further, "that most medical men in large towns will have seen the co-existence of scarlatina and measles." This may be, but I doubt very much whether scarlatina and measles have been observed in the same patient at one time. I am, moreover, very doubtful about the distinction that this physician and many others have made between the rose-coloured and the rubeolate or mulberry eruption; and the marked difference of opinion existing at present among the physicians of the Continent apparently demonstrates that on this subject there has been nothing irrefragably established. In the typical form of the disease in which the eruption appears, the number and magnitude of the spots will be found to vary considerably. I have seen them pale, roseate, dark red, and almost black. I cannot, therefore, agree in attaching, as many learned authors do, any very high importance to the precise nature of their tint. Professor Canstatt, who has written a most accurate description of all the cutaneous eruptions of exanthematic and enteric typhus, and who has observed those fevers in all parts of Europe, confesses that the colours of the true exanthema in eruptive typhus may very often be the same as that of the petechiæ so often seen in enteric typhus. If this be conceded, the diagnosis will chiefly depend on the degree of elevation and size of the spots, and the anteriority or posteriority of their appearance; for in genuine enteric typhus the petechiæ will seldom be seen before the ninth day. Be this as it may, I think that we must rely on phenomena of a more invariable character to gain any close approximation to the truth.

Probably most physicians who have seen and treated the eruptive and the enteric typhus will agree with me in considering that the symptoms as well as the causes of both these diseases are nearly the same. Both may arise from putrid effluvia, overcrowding, imperfect ventilation, bad water, uncleanness, innutritious, ill-

dressed, or unwholesome food, or too frequent use of animal food. To these may be added an irregular life, exhaustion, or contagion. I have no doubt of its contagiousness, although I am aware that this is sometimes denied. It has, however, been clearly demonstrated in a monograph emanating from the pen of the eminent Danish physician, Dr Trier. In Iceland I have found so many proofs of this, that a complete enumeration of them would protract this paper to a tedious length. Although Dr Stephen Ward and some English physicians doubt or deny it, I am myself prepared to advance the same proposition as Professor Canstatt, namely, that the contagiousness of enteric typhus can be contested by no unprejudiced observer.¹ On the Continent, with the exception of perhaps a small minority in France, there exists almost an entire unanimity of opinion.

An accomplished English writer, Dr Charles Murchison, Assistant-Physician to the King's College Hospital, and to the London Fever Hospital, in his most interesting contributions to the etiology of continued fever, is of the same opinion; for he says, in *The Lancet* of 8th May 1858, p. 464, "Typhus is eminently contagious. Typhoid fever is also contagious, but in a more limited degree, and possibly through a different medium." This is my opinion also. Typhus usually arises from inhalation of bad air in overcrowded dwellings, but typhoid from a great amount of organic impurities in water, or an immoderate use of animal food, especially if it be of an unwholesome character, and the persons taking it have digestive organs naturally delicate. This, however, does not in any way disprove the identity of the typhus poison and the typhoid,—for we know that decaying organic matter may engender either.

If we look closely into the predominant symptoms of both diseases, we shall find these symptoms are very like, and have only to suppose that the as yet unknown organic poison acts in typhus especially upon the brain, the lungs, and the skin, while in the typhoid fever it has acted more upon the mucous membrane of the ileum and cæcum, from which there arises an hyperemic state in the Peyer's glands, many times terminating in inflammation, suppuration, and gangrene. That this is really so I have been convinced of in some cases of our typhus, where the cutaneous exanthema did not make its appearance on the fourth or fifth day. In such cases I generally found more or less pain by pressure of the hand in the right iliac region, followed by diarrhoea, or with ochre-yellow pea-soup-like dejections. In some of these cases exanthematic eruptions were seen on the breast at the end of the fifth day, but it seldom then made its appearance on the extremities.

Besides the aforesaid, one symptom convinced me of the identity of the typhus and typhoid poison, and this was the truly specific odour exhaled from the patients in both these diseases. I have

¹ Handbuch der Medicinischen Klinik verfasst von Dr C. Canstatt. Erlangen. 1847: Zweiter Band. Pag. 572.

read that this same odour has been remarked by the genial medical writer, Dr Hilario Barlow; for he says, in his "Manual of the Practice of Medicine," page 706, "Besides this, there is an odour peculiar to different fevers, as typhus, scarlatina, and small-pox." The odour of small-pox is very well known, and has even been adduced amongst the most characteristic signs of this disease by the old medical writers. I still remember that I, as a young medical student at Copenhagen, was obliged to remark, in every journal of those affected with small-pox, whether there was a "halitus variolosus" or not, in order to be able to give a right diagnosis of the fever before the eruption. The odour of small-pox is very like the odour of salted herrings; and the odours of scarlatina, the measles, and the Asiatic cholera are so specific, that we must wonder they should not already have been well described and put down in our handbooks of medicine as one of the most characteristic diagnostic symptoms of these diseases. I think Dr Hilario Barlow quite right in advising the young medical students to cultivate all their senses, and especially the sense of smell, for had this been done in an exact manner, and with due precautions, there could be little doubt about the identity of typhus and typhoid poison. I know very well that this is a more easy trial in small Icelandic cottages than in the large and lofty wards, and it is on this account that I by the circumstances in our country have been more able to do so than my medical brethren in foreign countries. The odour of the typhus poison is so decided, that it is well known even among the peasants in this country, and they have given it the name of typhus odour, or of "Sóttarlykt," which means the "fever odour." When people come to ask my visit to one who is seized with typhus, they generally say, "We wish very much you would come to see the patient, for he is very bad off, and there is a strong fever odour about him." Sometimes they said, "Our patient is not very sick, but we are afraid of him, because there is a strong fever odour about him. We wish, therefore, very much that you would come and see him, because it is most likely the typhus, and we might also be sick by the contagion." It is very natural that in the small Icelandic houses (where there generally is allotted only about one hundred cubic feet of air for each individual) the typhus odour must be very strong and penetrating, and so it really was, for it might somewhere be called insupportable. I now tried if I could make out any difference between the odour of eruptive typhus and that of the enteric typhus, but, after many repeated trials, I came to the same conclusion, namely, that I could not find out any real difference. The odour was, of course, strongest in the overcrowded dwellings; but it was strong enough to be clearly perceived where two or three patients were in the same room of the larger ones. When the rooms were well ventilated, the odour would be weaker, but it never quite ceased unless strong and effective disinfecting compounds were used: it was, therefore, very often necessary to continue them

for a longer time, day and night, before the odour was wholly destroyed. Amongst all the disinfecting compounds I tried to this end, nothing was so effective as the iodoform; but its high price often prevented my using it as a disinfecting remedy for the rooms. Chlorine gas and bromine came next, and I found Sir William Burnett's chloride of zinc solution very serviceable. In the meantime, I found out that the chlorine gas and the bromine were nevertheless to be used with great caution, in order that they should not occasion cough, or affection of the lungs, when the air in the sick-room was too strongly impregnated by them. This effect was never seen, either with Sir William Burnett's solution of chloride of zinc, or with the iodoform, and I therefore generally used one of these last-named disinfecting substances, or charcoal. It was a fact worthy of reminding, that during the highest state of the epidemic in the spring 1860, there seemed to be a specific character of the air. The air would, namely, in the dwelling-rooms, very soon be corrupted if the windows were not thrown open many times a-day; and there was, I daresay, a bad "constitutio aerica;" but whether this was originated from the calm and the high barometer pressure which prevailed at that time, or by a want of electric tension in the air itself, I cannot tell. I have once before, in epidemic cholera, observed the same phenomenon, and, as far as I can remember, it has also been observed in this country during malignant influenza epidemics. The older physicians had a strong belief in the bad effect of what they called "constitutio aeris adynamica," and they believed that many malignant diseases might only arise from that cause; but I am inclined to look upon such a bad air-constitution only as a coefficient cause to the malignant epidemics.

Having made many experiments with the aforesaid disinfecting compounds, I very soon found out that they did not only destroy the odour of the typhus poison, but would also prevent other persons, who were obliged to remain and sleep in the same room as the patients, to be infected with typhus; and it, therefore, very soon became an incontestable fact, that these disinfecting remedies would not only destroy the odour of the typhus and typhoid poison, but that they did also destroy the poison itself.

During this time I made some experiments to know whether the chlorine gas and chlorine water would destroy the vaccinia or not, and all these experiments went out in the affirmative. It is well known that one Dr Schlegel in Prussia made many trials to destroy the contagion of Asiatic cholera during the years 1831, 1832, 1838, 1848, and 1849, and that he succeeded (see *Jahresbericht ueber die Fortschritte der Heilkunde*, 1849, von Dr Canstatt and Eisenmann, p. 134); and it is, moreover said in the *London Medical Gazette* for October 1849, that Dr W. Reid made the same experiments with the best success.

The renowned Dr Eisenmann in Germany tried chlorine-water in small-pox, and succeeded very well indeed. I was during three

years the superintendent physician to the quarantine for cholera in Denmark—for the years 1848–52 inclusive—and during this time I made some experiments with chlorine gas on those that came into the quarantine from infected harbours, and seemed to be infected by the contagion, and sure it is, that cholera did never spread from that quarantine, but broke out in Copenhagen half a year after the quarantine had been abandoned by law.

I now made up my mind and resolved to try the internal use of the different disinfecting remedies. I could do this with the more hope of good success, as I had seen chlorine-water used internally against the enteric typhus in Berlin, and as I knew that Professor Schönlein, the learned physician to the late king of Prussia, had formerly, in his clinical lectures on typhus and typhoid fever, recommended this remedy.

I have never been any great admirer of the “nothing-doing” or the so-named expectant practice, and I have seen plenty of its sad results. I must frankly confess that such a behaviour as is often recommended by the expectant physicians is strongly against my feelings, where any hope may be to do something positive, and I wish sincerely that our modern expectant medical practice might as soon as possible be transformed into a real and a more positive practice; but I think that a positive practice ought always to be built upon sound and exact physiological and chemical principles.

There is now-a-days, as before mentioned, even amongst the learned physicians, a general belief that we ought to allow the typhus and the typhoid fever to run their own course undisturbed by our art, only putting some physics against its most fearful symptoms, in case of need; but, notwithstanding the great respect I owe to my learned brethren, I think this is a great mistake which ought to be abandoned as soon as possible. The most of the physicians of our times admit the existence of the typhus and typhoid poison; but, in so doing, it seems not very consequent to tolerate a poison acting upon the system without trying to destroy it, if that is thought to be possible. Should we not, for instance, find it a great mistake, if we in a poisoned patient only would have the system itself to act against the swallowed poison? Of course, we shall in every instance of poisoning observe certain phenomena of the poisoning effect, and we may always find that the system will show a reaction against the poison itself, and this may then cause a certain succession of phenomena in some way very like that which happens during the action of the typhus poison on the body, and the reaction of the system against the poison. It therefore seems to me that the effect of the typhus and typhoid poison can be compared with certain narcotics acting upon the system,—viz., the action of some stupefacientia and deliriantia on the brain and the nervous system. Now as it would not be right or advisable to do nothing in case of poisoning by strychnia, morphia, aconitina, atropina, or other vegetable poisons, so I think it not quite right to do nothing against

organic poisons, in whatsoever form we might have to deal with them. It is true that the typhus and typhoid poisons may be generated in the system itself; but even in that case, I think we ought to do something in order to prevent such a dangerous accident; this seems also to be accepted by all medical men, at least to a certain degree, and all our sanitary measures are invented and tend to that purpose. But notwithstanding this, there seem still to be several circumstances in this respect, not as yet well taken into due consideration. The cleanliness in our dwellings and rooms in every respect is certainly a "*conditio sine qua non*," if we shall hope to get rid of fevers, but I think that our body, and especially our stomach and bowels, ought also to be cleaned in case of need. I know very well that purgative medicines may be abused, and are in truth often indiscriminately administered; but this, I think, is a common fault in our days, and has nothing to do with the right use of them. Sir Henry Holland who, in his *Medical Notes and Reflections*, so eminently clearly has treated this subject, and warned against the abuse of purgatives, says, page 454, "In truth there are cases where the bold and steady persistence in this method produces effects attainable in no other way. Such is especially the fact where the head is the part affected;" and he adds afterwards "or, again, where the body is disordered by certain morbid matters collected and circulating in the blood, the removal of which can thus only be speedily and sufficiently obtained. The latter case, of which I have spoken more at large elsewhere, is one of much importance in pathology. I may describe it briefly here, as that attested in practice by the very large and long-continued discharge of dark grumous matters, usually termed bile, and understood to come from accumulation in the liver; but which, I doubt not, to be secreted in great part from the membrane or glands of the intestines, and to be a gradual separation from the blood of matters noxious to the system." These remarks of this able and learned practitioner are worthy to be remembered and brought into use in due circumstances. I remember very well when I was in Germany and Scandinavia, that the doctors of these countries said, "the man was seized with gastric fever, but this fever is now becoming a nervous one." Those so-named nervous fevers were nothing but the latter stages of an enteric typhus, which, in its premonitory and first stage, had shown predominant symptoms of what we generally term gastric state (*status gastricus*), and this, I think, is a very common accident in the most epidemics of this fever. It is remarkable to see how the names "*febris gastrica*, *febris biliosa*, *febris mucosa*," have disappeared from the newer handbooks on practical medicine, and are now substituted by the name of enteric typhus and even relapsing fever, and this seems to indicate that our names for fevers are not very much to be relied upon. It is generally believed that the enteric typhus cannot be curtailed, but how can we know that this is really so? I observed many facts in this

epidemic that convinced me of the contrary truth; many patients who had all the premonitory symptoms of an enteric typhus, even with some diarrhoea and painful sensation by pressure of the hand in the right iliac region, recovered after some full doses of calomel, which then never failed to produce very heavy dejections of dark or dark-green grumous matter of the most offensive odour. The same grumous matter was also seen to continue for some time in those patients where the disease was either strong or advanced too far to be cut short by proceeding thus; but I must here remark, that in all instances of our typhus and typhoid fever, purgatives produced a good effect, and even where diarrhoea was observed from the beginning of the fever. I, therefore, wholly agree with Professor Canstatt, who, with his great experience, has found that diarrhoea in the beginning of enteric typhus does not at all contraindicate the use of purgatives. Meantime, I must confess that in speaking of the good effect of purgatives in typhus and typhoid fever, I refer this chiefly to the outset or the first stage of these diseases, and I think that in doing so, I will agree with many of the experienced authorities in our century. Sir Henry Holland says in his chapter on the abuse of purgative medicines, "There can be no doubt of the fitness of using purgatives in the early stage of most fevers."

It is a well-known fact, reported in many of the better works on practice of medicine, that the most learned German physicians have strongly recommended the use of calomel in the outset of typhoid fever, and amongst those I will only mention the names of Professors Schönlein, Canstatt, Sicherer, Rösch, Scharlau, and Richter; and it is, moreover, well-known that Dr Labarraque cured 28 out of 30 patients affected with enteric typhus by his "Liqueur de Labarraque," which was nothing else but a saline purgative. In short, I was formerly so strongly convinced of the good effect of purgatives in malignant fevers, that I always made a bold use of them in our epidemics, and got by my experience to that point of evidence, that I at last looked upon them as quite indispensable, both in eruptive and enteric typhus. I was of course led to this by long and melancholy experience; for I always found that when purgatives had been either not used at all or insufficiently administered, I was, without exception, in the latter stages of those fevers, sure to meet with the most malignant symptoms, as meteorismus, continued fetid diarrhoea, malignant ulcers in back and on the hip-joints, the greatest nervous depression, stupor, and gangrene of the lungs.

Regarding the use of emetics I was much more cautious. I know very well that they are still used by many physicians in these diseases, and are, of late, even recommended by the very highly experienced Dr Jackson in America (see the Association Medical Journal, 26th January 1856, p. 69); but, nevertheless, I have very little confidence in their use in typhus and typhoid fever, except in a very few cases, when, in order to clean the stomach from impurities,

there may be rational demand for them. When I was in Copenhagen I saw them seldom do much benefit; in our epidemics it has been the same. Many physicians formerly believed that they might curtail the typhus and typhoid fever, if they were duly given in the outset of these fevers; this may sometimes have happened, but I think it in many cases rather to have been a result of their purgative effect than the emetic virtue. For our epidemics they had many times been called in use before my arrival to the sick, but I very seldom saw any good effect of them, for they generally weakened the patients and never curtailed or mitigated the fever.

After what has now been said, it will be easy to guess the indications for my disinfecting treatment of typhus and typhoid fever, which were,—

1st, To prevent overcrowding in the farm-huts and cabins as far as possible, where this in any way could be done.

2d, To have the windows thrown open as often as the season would allow it, and make holes for ventilation where this could be most effectually done for purifying the air.

3d, To destroy every offensive odour about the sick, and even the smell of the sickness itself.

4th, To introduce cleanliness in every respect.

5th, To clean the bowels of the patients as soon as possible in an effective and perfect manner.

6th, To destroy instantly the odour of evacuations from the patients.

7th, To use internally disinfecting medicines in a bold and consequent manner.

8th, To support the strength of the patients by easily digestible but nourishing foods.

The first indication could very seldom be fulfilled, but it was done whenever possible. The second indication was for the most part tolerably executed, especially when the people got afraid of the contagion, and therefore dared not shut their windows, but followed for the most my advice in opening them.

The third indication was, after the lapse of some time, when the people had seen the good effect of it, boldly executed; and the remedies applied to this purpose were the aforesaid disinfecting compounds,—viz., chlorine-gas, Sir William Burnett's chloride of zinc solution, iodoform, and charcoal.

The fourth indication met with many obstacles, and could seldom, on account of bad habits or poverty, be executed as it ought to have been, or would have been, if cleanliness were a more common virtue in this country.

The fifth indication was fulfilled by administering a full dose of calomel, sulphate of magnesia, or sulphate of soda, all in large and repeated doses, according to age and other circumstances. The calomel was generally given in a dose of ten to twenty grains every day or every second day, until the fetid odour of the dejections was

gone. As the effect of this treatment, I may mention the lessened tenderness in the right iliac region and in the whole abdomen, lowering of the pulse, diminished headache, and more clear consciousness of the mind, when from the beginning there had been stupor or coma. In some cases sulphate of magnesia was given in a dose of a half or one ounce, until I was pretty sure of the bowels being well cleaned, and all bad odour of the evacuations had disappeared.

In order to execute the sixth indication, sulphate of iron was generally put into the water-closets before they were used; but, in some cases, chloride of lime was used for the same purpose. By these disinfecting compounds no odour of the dejections could be felt, although the patients had very large and noxious-smelling evacuations. I think that every one who knows the small and dirty Icelandic huts will agree with me that this is a quite indispensable proceeding to purify the air, where many patients are crowded together in small rooms. This method seldom failed to produce a happy effect upon the patients. The seventh indication was executed in several manners. If the patients were supposed to have strong and healthy respiratory systems, they were made to inhale iodoform or chlorine gas mixed with the air. The former remedy was most frequently used, and the good effect of it (according to my experience) is undeniable. It was in some instances given internally, dissolved in ether, and seemed often to produce a well-marked relief, and especially it was observed to check coma and delirium. The chloride of lime was never used internally, but the patients were often made to inhale the vapour of a concentrated solution of chloride of lime, which was managed in this manner:—Linen strips were dipped in the solution, and hung up to dry by the bedside, which caused a continuous chlorine gas exhalation in the room. By patients with weak and irritable lungs the iodoform was always preferred to the chlorine gas.

The eighth indication, namely, to support the strength of the patients, was fulfilled by nourishing food and decoction of bark; and this was sometimes recurred to in the third stage of the fever, in order to prevent death from exhaustion. It seems to me that many physicians are too much afraid of using nourishing diet in typhus fever, forgetting the great loss of nitrogenous compounds which this sickness, by the large excretion of urea, produces. I have seen many typhus patients in this country, who, as soon as they were able, took very nourishing food, which would never be allowed in the hospitals of Europe, recover speedily; and, comparing this fact with the languishing and protracted recovery in the hospitals, I conclude that nourishing food in the latter stages of this fever is quite indispensable.

As to the result of my treatment, I am obliged to make some remarks, and in so doing it is necessary to mention the ravages of the typhus fever in our country during the years 1859 and 1860. In the northern part of this island, and on the western shores, a

good many patients fell victims to it; so that in some parishes the mortality was no less than 1 in 16, or even 1 in 14, of the whole population. In some parishes every tenth inhabitant died from the sickness; and in many places, where no medical aid could be obtained, the mortality of the whole population for the year 1860 was 1 in 15 or 16. At the same time the mortality for the town of Reykjavik was only 1 in 29, and for the adjacent parish 1 in 27. Being the whole time obliged to go from one hut to another, and, besides, to make many visits in the neighbouring country, it was impossible for me to calculate the number of my patients in a perfect and accurate manner. I only know this (as aforesaid), that during the years 1858-61 I have had a number of not less than 900 cases of typhus and typhoid fever under my treatment, and that out of this number I have lost no more than 30 patients from this disease. In a neighbouring parish the number of the patients was 95, and out of this number only two died. I am, therefore, inclined to believe that if my disinfecting treatment had been carried on under favourable circumstances, the result might most probably have been still more conspicuous.

It is, I think, an acknowledged fact, that the eruptive and enteric typhus are dangerous fevers; and, although some physicians believe that the eruptive typhus is less dangerous than the enteric typhus, we have in this country, during the last epidemic, proofs of its malignity, which led to the enormous mortality of 1 in 6 of the inhabitants in some places. Almost the same fatal mortality as happened here, occurred during the last epidemic in the Westmanna Islands. The physician of that place fell at the outbreak of the epidemic a victim to the typhus, and out of 400 inhabitants 40 died afterwards. In some parishes in the east part of this island it is related that the mortality sometimes rose to 1 in 3 of the affected.

Mortality of typhus is, as we know, very variable, according to the nature of the epidemic constitution and other circumstances. In Hooper's "Physician's Vademecum," fifth edition, it will be seen, page 274, that the mortality of adynamic fevers in Edinburgh and Glasgow has very often been 1 in 10, and even 1 in 6 or 7, or as great as in some parishes of this island during the last epidemical typhus. From several articles in the *Lancet* I learn, moreover, that mortality of typhus in the hospitals of London is very often found to be 1 in 10, or even 1 in 8; and, according to Dr Trier of Copenhagen, the mortality of typhus and typhoid fever in that city has generally been 1 in 8, or sometimes 1 in 6. In Germany and France it is well known that the mortality from malignant fevers in the hospitals is generally 1 in 9, and sometimes 1 in 7; but in Russia, namely, St Petersburg and Moscow, it is still less favourable, being in some epidemics 1 in 5.

It is generally accepted now-a-days, that physicians, before the determination on the adoption of a particular method of treatment,

should always first inquire what would happen in this case if no remedies whatever were employed; or, in other words, if the patients were altogether left to nature, that is, to the efforts of their own constitution. Many renowned physicians will say, "The living machine, unlike the works of human invention, has the power of repairing itself. It contains within itself its own engineer, who, for the most part, in by far the greater number of cases, requires no more than some very slight assistance of our hands," etc. This is the fashionable talk of the most celebrated physicians in our time; but I have always thought that this principle is of as little use to medicine as it is unworthy of a science which now claims the name of an "exact learning." But fashion has a strange power, and thus this "inactive treatment" is become a general rule amongst the physicians of Europe in our century. In the meantime, it seems to me that the modern medicine has by this principle involved itself in some contradictions, or why do we then cure scurvy with large doses of citric acid, inveterate syphilis with large doses of iodide of potassium, intermittent fever with bark, rheumatism by repeated doses of bicarbonate of potassa, lithic diathesis and oxaluria with large doses of carbonates and strong mineral acids? Why do we at all give remedies for poisons? And if we give remedies against mineral and vegetable poisons, why not also for organic poisons? I hope that very few physicians will now-a-days deny the origin of malignant fevers from organic poison; but, if this is accepted to be true, why should we then not try by all possible means to destroy these poisons? Pure air is, no doubt, the most common destroyer of organic matter, and it is, I think, on this account that the modern ventilation has done so much good to prevent and cure malignant fevers. We may, I hope, go still farther, and clean out the organic poison from the human body by a right use of the principles of modern chemistry; but, leaving the destruction and elimination of fever poisons from the body to nature's efforts alone, we may, I think, very often be mistaken and disappointed.

Regarding the melancholy ravages of our epidemic typhus when it was allowed to run its own course, or whenever the patients were unaided by the medical interference, I can hardly doubt that my positive disinfecting treatment has been of some value, and I should indeed feel very happy if these few remarks could induce some of my dear colleagues to give it a fair trial.

REYKJAVIK, 1862.

ARTICLE III.—*On the Age at which Menstruation begins in Siam.*

By JAMES CAMPBELL, Surgeon R.N., of H.B.M.'s Consulate, Bangkok, Siam.

(*Read to the Obstetrical Society of Edinburgh, 6th August 1862.*)

ON the 21st February of this year, I attended at the British Consulate in Siam, to give evidence in the case of a young girl who

was injured during sexual congress with a Continental European, and was asked by Sir Robert Schomburgk, the President of the Court, "What (from my observation in the country) is generally the age of puberty?" In reply, I stated that the menses were believed to commence "earlier in hot climates than in cold;" but I considered that, in Siam, 15 years was about the rule. My opinion was immediately called in question by the defendant in the cause, who "remarked that according to Siamese law, women can be married when over 12 years of age," and gave as his authority the ex-Royal Physician, His Royal Highness the Prince Krom Huang Wongsa. The Prince, on being applied to for his opinion, replied as follows:—"Sometimes Siamese girls arrive at puberty when only 12 years of age, but more generally at the ages of 14, 15, 16, 17, and 18 years;" and "there is no law or custom fixing the time of life at which Siamese sons and daughters are given in marriage; but I have observed that they are more generally given in marriage from 17 years up to 20; this may be said to be the rule,—to marry younger, the exception."

In Europe a belief prevails that the menses appear years earlier in warm countries than the ages above given, and hence I am desirous of placing on record the following data—relating to Siam—on the subject. As I believe errors often creep into statistics of ages from a lax mode of noting the years, I have, in the following tables, prefixed the symbol *plus* to the years as a means of indicating that the persons were above the ages given.

TABLE I.

Number.	Years.	Menstruated.
46	+12	4
45	+13	7
32	+14	12
44	+15	26
33	+16	26
13	+17	11
13	+18	13
5	+19	5
231	...	104

TABLE II.

Years when Menses began.	Numbers.
+12	8
+13	16
+14	33
+15	29
+16	13
+17	5
+18	0
+19	0
Total.....	104

Table I. is of a purely negative character, but still is invaluable, as showing that at the ages given only so many had menstruated; it is indeed a more valuable record than Table II., which, as it gives, in many instances, the dates of the first occurrence of the menses from memory, must, in the case of the older women, be a little in error; however, that error is, I believe, invariably on the side of early, not late menstruation, as, from the peculiar mode of calculation prevalent among the Siamese, I subtracted one year from the ages stated.

There is another mode of showing how late menstruation begins in Siam; and it is by inquiring into the custom of the country, relative to a religious rite to be observed before attaining puberty—for instance, having the hair trimmed for womanhood. The ex-Royal Physician, before referred to, states, “that if a girl have her menses come on while yet she has not had her hair trimmed for womanhood, it is a shame to her; hence there are respectable parents who have the heads of their daughters trimmed into womanly style when they are 11 years of age, fearing that their menses may overtake them ere it has been done; and there are those who, judging from the smallness of the persons of their daughters, and from the history of their families, that they will not attain to puberty short of 14 or 15 years of age, consequently postpone the ceremonies of their hair-cutting until about that age.” The truth, however, is this, that the Siamese almost never cut their daughters’ hair for womanhood, excepting at the ages of +10 and +12, called by them 11 and 13, for though they do perform the operation at +8, called by them 9, it is not from a fear of early womanhood; and of cases at +14, I have only met one instance. There is not only an insurmountable superstition against having the hair trimmed at the years intermediate to those stated (+9, 11, and 13), but there is even a like prohibition to having it performed on any other months than the 2d, 4th, 6th, 9th, and 12th—five months a-year—months sacred for other ceremonies, and hence this rite becomes a valuable means of getting comparatively certain records for the age before which menstruation does not occur. For instance,

Hair trimmed for
Womanhood.

Numbers.	Years.
4	+8
81	+10
149	+12
1	+14
234	...

Moreover, of the 81 who had their hair trimmed in their eleventh year, not one, I believe, did so from a fear of the menses setting in before the thirteenth year. I have taken the trouble to analyze the above 81, to find out when they menstruated, and obtained the following results:—

Menstruated.		Number who have not yet Men- struated.	Totals.
When.	Number.		
+10	0	3	3
+11	0	8	8
+12	5	14	19
+13	8	10	18
+14	8	4	12
+15	6	7	13
+16	2	4	6
+17	1	1	2
Totals...	30	51	81

These statistics show quite a different age to be the mean period of menstruation beginning in Siam, to those given by Drs Goodeve of Calcutta, and Leith of Bombay, the mean of whose tables is respectively 11 years 11 months 13 days, and 12 years 5 months 23 days. I have not met an instance of a female who has menstruated before 12 years and 5 months, and have been told of one only who had her menses before that age; but I recently saw two girls, in the theatrical corps of one of the nobles, who, judging from their large uncovered mammæ, would have a chance of menstruating before the above minimum period. During my inquiry into this subject, I have seen only one female who menstruated prior to her hair being trimmed; that person's hair was cut on the same day with five co-pawns; she was 12 years and 8 months, and another was 12 years and 11 months. All were above 12 years of age.

I have been told that the Siamese now menstruate at an earlier age than fifty years ago; and an old nobleman, who adheres to this view, once called some of his aged dependents to illustrate the point: he failed, however, as most of the aged women gave a year earlier than that which obtained in the cases of their daughters. He likewise gave as a reason that, in his youth, women of fifteen and upwards were wont to bathe nude in the rivers and canals, whereas now, from more speedy development, they never do so at that age.

It may not be irrelevant to this topic to mention, that during their infantine life the Siamese present many marks of retarded physical development; for instance, late teething, walking, speaking, closing of the fontanelle, etc.

ARTICLE IV.—*On the Radical Cure of Exomphalos in the Adult.*

By PATRICK HERON WATSON, M.D., F.R.C.S., Lecturer on Surgery; Assistant-Surgeon, Royal Infirmary; Surgeon to the Eye Infirmary, etc., etc.

(Read to the Medico-Chirurgical Society, 2d July 1862.)

I WAS requested, in the beginning of February, to see E. M., æt. 35, on account of a large reducible umbilical hernia. She was unmarried, and had never been pregnant. The protrusion was in the situation of the umbilicus; it was fully larger than a cocoa-nut with the husk. Its contents were composed principally of bowel, but partly of omentum. The intestinal portion of its contents was easily returned; the omental part only by careful packing in, bit by bit, through the mouth of the sac. Not only did these manipulations always give rise to a good deal of qualmy uneasiness, but while the hernial protrusion was unreduced, the usual symptoms of weakness, pain, and irregularity of the bowels were complained of. When reduced, the uneasiness was for the time relieved; but the

patient found it impossible, even when recumbent, by means of any pad, truss, or bandage, to keep up such pressure as was requisite to retain the parts within the cavity of the abdomen. This was partly due to the size of the protruded contents, partly to the natural obesity of the individual, and partly to the large size of the opening through which the protrusion had occurred. When the parts were returned, the cutaneous covering of the sac, consisting of stretched integumental tissue, hung like a bag with the cicatrix of the umbilicus in its centre. The four fingers and thumb of the left hand could easily be pushed along with this pouch of skin through the hernial aperture into the abdomen, and it was only so long as they were kept in this position, that protrusion of the contents of the abdominal cavity was completely prevented.

It seems that about seven years ago she had received a kick from a cow close to the umbilicus, and that a swelling had formed there immediately afterwards, which she was able to push back; but neglected,—it had gradually increased in size until it had attained its present bulk, and now in spite of every means contrived to retain it, the protrusion always escaped control.

Under these circumstances, she was extremely anxious that something should be done with the view of preventing the occurrence of the protrusion, as it had become so very troublesome, both in itself and from the debility it occasioned, as to prevent her from following her usual avocation, which was that of a cook.

As ordinary means of retention were unavailing, the case seemed well suited for the employment of some radical method of treatment, but a review of the methods which had been employed for the radical cure of hernial protrusions at the other abdominal apertures, did not afford any prospect of a successful adaptation of them to the requirements of this special site and case.

It was sufficiently obvious that the injection of the sac by means of tincture of iodine, the irritation of the aperture of communication by introducing a pointed instrument into the sac and scoring its mouth, or the introduction of fragments of gelatine or gold-beater's skin, as was ingeniously devised by Belmas, or of wire setons, as more recently recommended, to set up adhesive inflammation in the sac, were methods, which, if likely ever to prove beneficial in any situation, could here only be productive of incalculable mischief. The sac was in direct communication with the abdominal cavity; there was no intermediate canal; and there was no power by which the bowels could be retained, or the sac cut off from its communication with the general peritoneal cavity, both during these manipulations, and the after period, when the same conditions would require to be maintained.

The old and obsolete methods by extensive cauterization of the surface, either by the actual or potential cauteries, required no consideration, being obviously quite inadmissible under any circumstances. The invagination of the skin, to act as a retaining plug,

according to the method recommended by Professor Wutzer in inguinal hernia, or any of the various modifications or improvements on his plan, suggested in this country or elsewhere, was quite unsuited to this situation, as, from the size of the aperture, and the condition of the integument, they were not calculated to effect the retention of the parts within the abdominal cavity, while the presence of the plug would tend to prevent the contraction of the aperture, and thus to maintain rather than remove the essential cause upon which the protrusion depended. The application of a tight ligature encircling the root of the protrusion, as practised by Desault for the radical cure of infantile exomphalos, was quite out of the question.

Furthermore, it seemed obvious that *the royal suture or golden suture*, by which the neck of the serous sac should be included in a loop of metallic wire, although it might obstruct the communication between the sac and the general peritoneal cavity, was, like all the other methods alluded to, obviously insufficient to prevent the occurrence of another protrusion through the same fibrous opening.

It was evident, therefore, that some method by which the margins of the tendinous aperture itself should be brought together was alone suited to answer the requirements of the case. This might be effected in different ways, such as excising the redundant integument and sac, rawing the edges of the tendinous aperture, and bringing the whole cut surfaces into accurate apposition by means of silver sutures. It was also possible, by passing long needles or by introducing points of interrupted suture, subcutaneously, to approximate the edges of the aperture, so as to prevent protrusion, and to maintain them in linear apposition, until firmly agglutinated and consolidated by the adhesive inflammation excited by the presence of the metallic bodies.

The first of these plans seemed too dangerous to be undertaken, the second and last too complicated in their manipulations to lead one to select them by choice for performance.

It occurred to me, however, that by passing a wire backwards and forwards subintegumentally through the margin of the fibrous aperture, the parts might be drawn together, as the mouth of a bag or purse is by a string, so as to prevent all protrusion for the time, while such an amount of consolidation would occur as should effect the permanent occlusion of the opening.

Accordingly, on the 20th of May, the patient having had her bowels freely evacuated, I reduced the hernial contents, and keeping them reduced by introducing the fingers of the left hand into the large circular opening, I passed the point and shaft of a needle in a fixed handle armed with stout silver wire, three times backwards and forwards, subcutaneously, through the upper half of the tendinous circumference of the aperture. The point of the needle was then carried outwards through the skin, and the wire disengaged. Having then withdrawn the needle, it was again armed

with the other extremity of the same wire, and, introducing its point by the first cutaneous puncture, it was passed three times backwards and forwards through the lower half of the circumference of the tendinous opening, and made to emerge through the same cutaneous puncture as the end of the wire which had been first passed. In this way the aperture was surrounded by a loop of wire, and its margin so picked up as to admit of its being firmly drawn together. The two ends were now drawn by an assistant across each other, when the aperture was felt to become more and more contracted, until the little finger was tightly constricted; with a little more traction this opening was felt to become entirely occluded. The ends of the wire were now crossed two or three times, so as to twist them together, and thus prevent the opening from becoming relaxed. The ends were farther crossed over a roller bandage, so as to admit of the wire being tightened, by twisting from day to day should this be requisite. To afford steady support a pad was placed over the site of the hernial aperture, and a flannel bandage carried round the abdomen.

As the immediate result of the operation the sac became distended with serous fluid and masses of lymph. But these were speedily removed by absorption without the employment of any treatment. Slight suppuration, however, occurred along the course of the wire, where it emerged from the skin, and a limited abscess formed beneath the skin, but external to the tendinous surface; this was opened—after which the parts cicatrized. At the end of the first week the wire was daily twisted more and more, and on the tenth day after the operation the wire came away of its own accord. The loose integumental texture which enveloped the hernia gradually contracted until the surface became quite level, and a mere thimble-like projection indicated the portion of the tissues which had been spread out over the rupture. On the 20th of March, eighteen days after the operation, the parts were perfectly consolidated. After this the patient was up every day and walked about; and by the 20th of April was so perfectly strong and well, as to be able to return to the country to resume her duties in the kitchen.

With the exception of rare instances of congenital deficiency in the abdominal walls, permitting protrusion to recur in this situation, the greater number of cases of exomphalos in the child occur within a brief period after birth, and require no treatment, except support, to enable spontaneous contraction of the umbilical opening to effect a true radical cure. To attain this, however, satisfactorily and speedily, the nipple-shaped portion of cork which is usually recommended to be applied over the dilated opening so as to occupy it, and prevent protrusion, should not be employed. For by its conical form it acts not merely as a means of repression, but also by its presence in the aperture prevents, or at all events delays, the occurrence of permanent and complete contraction and consolidation

of the opening. The retentive pad should therefore consist of a smooth, well padded, flat surface, of some firm material—such as sheet lead, tin, or bend leather, which can be retained in contact with the surface over the umbilicus, so that while it prevents the recurrence of any protrusion, it may have no effect in interfering with the process of spontaneous consolidation. In the adult, again, exomphalos is a rare affection. The protrusion usually takes place not through the umbilical opening, but through the tendinous textures, either above or below, on one side or the other of the navel. It is in most cases easily retained by means of a suitable belt or truss, but never spontaneously undergoes a cure by the use of those means.

With reference to the employment of the radical cure in cases of hernia generally, I have always been of opinion that so long as retentive measures prove efficient in restraining the rupture, and there is no progressive increase in the dilatation of the aperture by which the protrusion escapes, there is no call for any operative interference to effect a radical cure—that, in fact, nothing better can be desired than a well-fitting truss. But where no retentive measures are sufficient, where the protrusion increases, where it threatens to give rise to serious results, and prevents the patient from following an avocation by means of which he gains his livelihood, it seems to me there is a great propriety in operative interference, if such interference can be shown to be competent to attain efficiently the object in view—that object manifestly being, not merely the temporary retention of the protrusion, but the complete consolidation of the aperture through which the hernia escapes—the radical cure, in fact, not of the result of the morbid change in the parts, but of the cause which permitted the displacement to occur. In the so-called radical cure of most hernial protrusions, as, for example, in the oblique inguinal ruptures by the methods proposed, the plugging of the canal, so as to support the parts and prevent the protrusion, is what is effected, and not the drawing together of the internal abdominal ring, so as to preclude the occurrence of any future protrusion, which is what theoretically we should have desiderated. Hence it is, that in most of these so-called radical cures, the patient still requires to resort to the use of a truss, to prevent any protrusion from forming and displacing the plug of integument or subcutaneous cellular tissue which temporarily occupies the canal.

It is in this respect, therefore, that the method of radical cure of exomphalos, which I have just detailed, differs from those others to which I have alluded. It acts not merely by repression, but by actual prevention; it does not only obstruct the escape of the hernia, but it obliterates the very doorway of escape, and restores the weakened, opened up, and dilated portion of the abdominal parietes to its normal condition.

The peculiar anatomical arrangement of the parts in the oblique inguinal hernia, and in femoral hernia, related as the mouth of the

hernial sac is to vascular parts of great importance, renders it attended by too great a risk of inflicting serious mischief to admit of the application of this method to the treatment of cases of reducible hernial protrusion occupying those situations. It is so far fortunate, however, that in these situations a well-fitting truss, applied with ordinary attention, will generally suffice to support the parts, to keep the patient comfortable, and to relieve him of the risk of serious consequences which would accrue were the rupture left unsupported. In the case of the direct form of inguinal hernia, however, it is frequently found to be extremely difficult to retain the hernial protrusion within the abdomen, or, in order to do so, a truss must be employed, which by its firm pressure galls the part and makes the patient very uneasy. In such cases, then, there seems to me to be nothing which should so absolutely interfere with the safety and success of the encircling of the fibrous textures constituting the mouth of the hernial sac in the manner already detailed, as to forbid its employment. The epigastric artery could alone come in the way, and might with moderate care be easily enough avoided, the finger being passed along with the integuments within the abdomen, so as to guide the point and passage of the needle.

Having, however, had no occasion, since treating the case of exomphalos which I have detailed, and which led to the first employment of this method, to meet with any case of direct inguinal hernia which could not be retained by means of a well-fitting truss, I can only throw out these remarks with reference to the adoption of this plan in such cases, as a suggestion which, although it has no foundation in experience, may appear not unworthy of being tested in actual practice.

ARTICLE V.—*Notes on Surgical Cases, treated by* EBENEZER FLEMING, M.D., L.R.C.S.E., *Stranraer, Wigtownshire.*

(Continued from page 30.)

CASE VII.—*Wound of the Posterior Tibial Artery. Ligature. Recovery.*

John Watson, aged 22 years, carpenter. 30th October 1861.—While employed, this morning, cutting wood with an adze, on the wooden pier at Stranraer, in connexion with the Portpatrick Railway, the blow fell upon his left foot, cutting through a heavy boot and stocking, and inflicting a deep wound three and three-quarter inches in length, on the inner aspect of the foot, beneath, but not opening into, the ankle-joint. On examination, I found the blood flowing rapidly, *per saltum*, the posterior tibial artery being severed. He had lost a large quantity of arterial blood. With the assistance of one of the carpenters I succeeded in applying a ligature round the bleeding artery, and the hæmorrhage was instantly arrested. I brought the lips of the wound together by several stitches, and applied cold-water dressing. There was no secondary hæmorrhage. On the third day I found the patient very anæmic, with quick, feeble pulse, and the wound unhealthy in appearance. I removed some of the stitches, and substituted zinc lotion for the water dressing. Ordered twenty-five drops of the tincture of the muriate of iron, three times daily, with good diet. When

this treatment had been persevered in for some weeks, the wound assumed a healthy aspect, and healed by granulations.

Remarks.—This patient was naturally of a cachectic constitution, and the great loss of blood had a most depressing effect. The wound early assumed a sloughy appearance, the lips being widely separated. I thought it impossible to get it to take on healthy action so long as the system was so far below par. On that account I considered the constitutional of more importance than the local treatment. He did not return to the works for nine weeks.

CASE VIII.—*Fracture of outer third of Right Clavicle; Fracture of Second, Third, and Fourth Ribs. Subsequent Pneumonia. Recovery.*

James Cowan, æt. 34 years, railway labourer. 7th November 1861.—While standing on the brake (reversed) at the side of a waggon descending the incline from the viaduct, was jammed between a house, close to the line of rails, and the waggon. On examination, I found fracture of the right clavicle at its outer third, fracture of the second, third, and fourth ribs, with great depression about two inches from their sternal extremity. I strapped the clavicle with pads in the axillæ, and the right arm was fixed to the body in the usual way. A large plaster was applied over the fractured ribs, and secured by a strong, broad bandage. Quickness of pulse, cough, difficulty of breathing, preceded a severe attack of inflammation of the right lung, which became fully marked on the fourth day. The symptoms were flushed face of a dusky hue; livid lips; soft, quick pulse; pain in right side; great oppression and difficulty of breathing, so as at times to threaten suffocation; and rusty sputa. I could not make a minute examination by the stethoscope on account of the bandages, etc., nor did I consider it necessary, as the general symptoms were sufficiently well marked. To relieve the oppressed chest, and diminish the volume of blood, I opened a vein in the arm, and allowed a small plateful of blood to flow, with great relief. The rest of the treatment consisted of an antimonial mixture, in doses sufficient to cause slight nausea; calomel and opium, until the inflammation began to subside, when the patient was ordered wine and beef-tea. Under this treatment he rapidly improved; the fractured bones united in the usual time. Some cough remained, but of this, too, he completely recovered, and was able to return to the works in nine weeks.

Remarks.—I believe the pneumonia in this case was occasioned by the severe pressure to which the right lung was subjected. I have mentioned that it became *fully* marked on the fourth day, but most probably it was in an incipient state much sooner. The flush of the face was not the usual bright flush so pathognomonic of ordinary idiopathic inflammation of the lung, but rather the dusky, livid appearance of asphyxia. I have remarked similar appearances in other severe injuries of the chest. The bleeding certainly had an impression on the abnormal state of the skin, as well as on the general symptoms. I very seldom resort to the lancet, but in this case I should not have liked to dispense with it altogether.

CASE IX.—*Compound Dislocation of Wrist; Dislocation at elbow of Ulna and Radius backwards; Dislocation of Left Fibula outwards. Recovery.*

Matthew Crosbie, æt. 26 years, railway labourer. 12th November 1861.—While two waggons laden with large stones were being drawn over a temporary wooden staging at the Piltanton viaduct, two miles from Stranraer, some of the supports, which had been loosened by heavy falls of rain, gave way, and precipitated to the bottom, from a height of sixty feet, two lads, named respectively Robert Taylor and William Connolly, the horse and waggons, and Crosbie, who was working a travelling crane at some little distance. The two boys were killed instantaneously, their bodies being frightfully mutilated. Crosbie I found had sustained the following injuries:—Compound dislocation of the right wrist, the hand thrown inwards and forwards; the wound, an inch and half long, on the external aspect, exposed the styloid process of the

ulna, and opened into the joint. Dislocation (at elbow) of ulna and radius. Dislocation of left fibula outwards. I had reduced the dislocation at the wrist, closed the wound with straps of adhesive plaster, and applied light splints and a bandage, before I detected in the same arm dislocation at the elbow. On perceiving it, I applied a double clove hitch; one loop on each side below the joint. I caused the assistants by that means to keep up extension and counter-extension, while I forced the bones into their places, and afterwards bent the arm across the chest. The fibula was easily reduced by extension and pressure. As the patient was in a state of insensibility, I dispensed with the use of chloroform. He was partially aroused by my manipulation, and soon afterwards was fully conscious. *Same evening.*—Wrist very painful and much swollen. Hot fomentations were applied, and the dressings were adjusted more loosely, and in such a way as to allow the wound to be dressed without removing the splints. During the subsequent treatment the wound was dressed with zinc lotion, and cold water was kept constantly applied to the joint; the limb was laid on an air-cushion, and maintained in a state of absolute rest. An abscess formed two inches above the wrist on the eighth day. By moderate pressure I evacuated the pus through the wound. In four weeks the wound was healed, and passive motion of the joints resumed. Considerable stiffness of the elbow remained, occasioned by the state of rest required for the treatment of the compound dislocation. In three months he was able to return to the works, and the stiffness of the elbow is gradually giving way under flexion, etc.

Remarks.—The injury to the wrist was the most severe, and was first attended to. Had I perceived the dislocation at the elbow before adjusting the wrist, I believe I should have followed the same treatment. Considerable difficulty was experienced in reducing the dislocation of the elbow, from the short leverage that could be applied to it, but by a little perseverance it was successful. Eventually the limb will be as good as ever.

CASE X.—*Fracture of Femur (Intracapsular). Subsequent Periostitis, with Typhoid Symptoms. Recovery, with a little Shortening.*

John McGeoch, æt. 22 years, railway labourer. 28th November 1861.—While engaged in erecting a wooden staging at the Gibbert Quarry, three miles from Stranraer, in walking along a plank, at a height of sixteen feet, to secure a supporting beam, his foot slipped, and he fell to the ground on his right loin among loose stones. Nearly three hours elapsed before he was removed to his house in Stranraer. After examining the injured limb, I considered he had sustained a dislocation at the hip upwards and backwards, on the dorsum ilii. The symptoms were, shortening two inches; foot turned inwards, toes resting on instep of left foot. I made a few simple movements to reduce the supposed dislocation, but, finding it was not to be so easily accomplished, I went for chloroform, and learning that Dr Robertson of Portpatrick was in town, I requested his assistance. The patient being fully under the influence of chloroform, we found, on successive attempts, that the limb could be brought to its normal length and symmetry, but immediately on discontinuing the extension, it resumed its former state. Evidently, then, it was a case of fracture, and not dislocation. I sent for the long splint, etc., but, before applying it, we thought it right to request Dr Orgill to see the patient, and give his opinion. On examining the limb, he coincided in the opinion that it was a fracture of the femur, either intracapsular, or immediately above the trochanters. The limb was put up in the usual way, and the splint retained for two months. In two weeks longer the patient was able to walk about on crutches, and place a considerable weight on the limb. The shortening was less than an inch, and on two separate occasions he walked a distance of six hundred yards.

17th February 1862.—Again requested to visit patient. I found he was labouring under considerable constitutional irritation. Had a severe rigor two days previously; pulse quick; tongue coated with a brown fur; urine scanty and high-coloured. Right leg swollen, and presenting large patches of erysipelatous redness. Congestion of both lungs. I did not keep a daily record

of the case, but I may state generally that low typhoid symptoms ensued. Quick, irregular pulse; muttering delirium; black tongue and lips; for about ten days urine and fæces passed involuntarily; hippocratic expression of countenance; limb swollen to double its former size, and red from toes to groin. *4th March.*—Detected deep-seated fluctuation at outer side of thigh. Made a free incision, from which flowed two cupfuls of most offensive pus. The drain from the wound continued for fourteen days, during which his strength was kept up by a liberal allowance of wine, beef-tea, etc. A lotion containing acetate of lead was applied to the limb. The swelling rapidly subsided; tongue began to clean; urine became abundant, and was passed voluntarily; skin moist; sleep undisturbed;—in short, the general symptoms of recovery. *18th April.*—Completely recovered. Again able to move about, and put considerable weight on the limb. In a few weeks longer he was able to return to the works.

Remarks.—The foregoing case presents many features of practical interest,—first, the primary difficulty of diagnosis; and, after the recovery from the fracture was all but complete, the supervening of an acute and dangerous disease. There are few practical surgeons who have not remarked that, after recovery from a fracture requiring long confinement, there is a strong predisposition in the system to take on disease of an acute form, on being exposed to slight causes. It will be observed that the patient walked a considerable distance from his house in the beginning of February. He was thinly clad, and at that time the weather was very severe. That appeared to me the cause of the subsequent severe attack of periostitis.

CASE XI.—Dislocation of Astragalus, outwards and forwards; Partial Dislocation of the Ninth, Tenth, and Eleventh Dorsal Vertebrae. Recovery.

James M'Mullen, aged 47 years, railway labourer. *27th December 1861.*—While engaged with two other men in removing a centre beam at the wooden staging of the Piltanton viaduct, it suddenly canted back, and he was thrown to the bottom, a height of about forty feet. The whole weight of the body fell on the left foot. I saw him soon after the accident. There was almost no swelling of the foot; and, as he was a very thin, spare man, the diagnosis was comparatively easy. I found the astragalus completely dislocated outwards and forwards, lying in front of the external malleolus; the superior articular surface was subcutaneous, and directed outwards. The tibia was fractured longitudinally, a groove being perceptible in the course of the bone, about two inches above, and extending towards the ankle-joint. With the aid of three powerful assistants, two of whom maintained extension, and one counter-extension, I caused the thigh to be bent on the abdomen, and the leg on the thigh, and by repeated manipulation I succeeded in forcing the astragalus into its normal site. I endeavoured to retain it with a mould of gutta-percha and lateral wooden splints firmly applied, but, on account of the subsequent swelling of the ankle, the dressing required to be loosed. After the limb was adjusted, patient directed my attention to his back, which occasioned him great pain. I found prominences over the spine, indicating partial dislocation of the ninth, tenth, and eleventh dorsal vertebrae; but, as there was great abdominal pain and swelling, he could not tolerate any pressure by bandaging. *28th, Noon.*—Has passed no urine since the accident. Used an elastic catheter, and drew away half a pint of urine. *7 o'clock P.M.*—The dressings were removed from the leg in presence of Dr Robertson. We found a slight bony projection at the site of the original dislocation. We again reduced it, but found there was still a tendency to displacement. We decided on applying no more pressure to retain it, believing it was too slight to interfere with the functions of the joint. On again introducing the catheter, only a tablespoonful of urine came away. It contained a small coagulum of blood. Pulse was small and quick; abdomen swollen and tender on pressure at the lower part. At this time we thought the bladder might have suffered. Calomel and opium was given in repeated doses. *29th.*—Symptoms much

more favourable. Slept some during the night. About one o'clock (A.M.), requested to visit him and use the catheter. The urine contained no blood. To-day, I passed the catheter every second hour, lest there might be any urinary infiltration. For several days I continued to use the catheter often, but, as the symptoms subsided, and the danger passed away, I instructed the patient—a shrewd, intelligent man—to do so himself. In ten days he was able to dispense with the use of the catheter altogether. Evidently the retention of urine was caused by the spinal injury, and not from any injury to the bladder. In five weeks the fracture of the tibia was found united; so the dressings were discontinued, and motion of the ankle-joint resumed. Ten weeks elapsed ere the patient could raise himself in bed; three months before he was able to move out of it without assistance. At this time he could place considerable weight on the foot, but the back felt weak. In another month he was able to walk some little distance out of his house on crutches. With the exercise he was thus enabled to take, his strength improved. The pain and weakness in the back subsided, and it felt stronger. The ankle showed less tendency to swell, and he can put nearly as much weight on it as on the other foot. *6th June.*—Up to this date there has been a continued progressive improvement. In a few days he expects to be able to return to the works. This the contractors make practicable, by furnishing *light* employment to such of the men as have been injured.

Remarks.—This case bears some similarity to cases No. II. and IV. of this series. In all there was dislocation of one or more of the dorsal vertebræ, and also severe injuries of the ankle. Constitutional shock was very great, and continued for two days, during which stimulants had to be given freely. I believe this patient's natural fortitude and strength of mind operated favourably towards his recovery.

CASE XII.—*Wound of Left Hand, caused by the accidental discharge of a Pistol. Amputation at the Wrist.*

Mrs M'C., aged 50 years, residing three miles from Stranraer. *11th March 1862.*—Early this morning, attempted to fire a pistol used for frightening crows, which had been charged with paper and gunpowder. Finding it was stiff, and did not go off on the first attempt, she proceeded to use more force, when it suddenly discharged, the contents passing through the centre of the left hand. I found the metacarpal bones comminuted, and dislocated from the bones of the carpus, the soft parts of the hand frightfully mangled and torn. There was a profuse flow of blood, *per saltum*, from the superficial palmar arch. I attempted to apply a ligature round the bleeding point, but failed on two occasions, not having a surgical assistant. I succeeded on the third attempt, in the following way:—First, I secured the artery, and held the forceps in my right hand; with the left I succeeded in applying the ligature; this instantly arrested the flow of blood. Preparatory to amputation, which I saw to be indispensably necessary, I requested Dr Easton's attendance. On his arrival, and with his assistance, the patient being fully under the influence of chloroform, I dissected the hand from the wrist, removing the carpal bones, and leaving sufficient skin and soft tissues to cover the ends of the bones. Three arteries required to be tied. The flaps were brought together by stitches, and cold-water dressings applied. The ligatures came away within fourteen days, and the stump healed satisfactorily in four weeks.

Remarks.—It is a fact well known, particularly to surgeons accustomed to treat gunshot wounds, that cotton wadding, blank cartridge, and even paper, will inflict injuries of great severity, if the piece be applied near to the object. In this case, I believe the woman's left hand was placed over the muzzle of the pistol, hence the severe nature of the injuries sustained. It will be remarked that this is the second case of the series where amputation was performed through a joint, the first having been at the shoulder (*vide* Case V. of the series). I found on both occasions that union progressed as rapidly as when the operation was performed at a distance from an articulation.

CASE XIII.—*Severe Injury of Face, from an Explosion of Gunpowder. One Eye destroyed, the other seriously injured.*

Joseph Rae, aged 36 years, railway labourer. *3d April 1862.*—This morning, while engaged with two others at the Mount Pleasant cutting, on the Portpatrick contract, about two miles from Stranraer, in removing from a hole a charge of gunpowder, used for blasting the solid rock, the steel instrument ignited the powder, and caused it to explode in his face. He was removed to his house, six miles from Stranraer, where I saw him soon after the accident. The face was black, swollen, and frightfully disfigured. The left eyelid was severed at its centre. The humours had escaped from the eye, which was shrunk, and quite destroyed. Between the lid and the eye I found a perfect quarry of coarse gunpowder, some of it loose, and some of it lodged in the substance of the eye and lids. The right eye also contained a considerable quantity of powder, some of which was also lodged. The cornea was rough, its surface irregular, and it was wounded in several parts. The sclerotica was extensively wounded, internally, superiorly, and externally. The iris was hazy, and its margins irregular. Some vision remained, but patient was unable to distinguish the form of objects. There was a wound two inches in length on the left cheek, and a triangular wound of considerable extent through the substance of the lower lip, from which liquids flowed freely on attempting to swallow. A lower incisor tooth was broken. I intrusted the washing of the face to three assistants; while I removed the gunpowder from the eyes by means of lint, tied securely to a strong director; and, after all the particles were removed, I washed the eyes effectually with tepid water. I also removed the powder, earth, and stones from the wounds. The time thus consumed was about two hours and a half. The subsequent treatment was, approximation of the severed eyelid and wounds of face by stitches, and the constant application of cold-water dressings; leeches around right eye; extract of belladonna, moistened, and smeared along upper eyebrow; bichloride of mercury wash; the eye to be touched once daily with a six-grain solution of nitrate of silver; confinement to a darkened room. In eight days the wounds were nearly healed. There was never any constitutional disturbance or irritation, pulse remaining constantly at 72, and some appetite for food. The left eye became more shrunk, and in the centre staphylomatous. There was also some sloughing of superior eyelid of right eye. *11th April.*—At this date I arranged for having him removed into town, so that he might be more completely under my charge. Up to this date there was little improvement of vision of right eye. He bore the journey well, and no unfavourable consequences followed. *12th.*—Complains much of pain in forehead. While bathing the left eye, the crystalline lens suddenly slipped out, leaving exposed the dark-coloured pigment membrane. In a few days the superior lid became fixed to the remains of the eye. A fleshy excrescence, springing from inferior eyelid of right eye, was reduced by the application of sulphate of copper twice daily. *13th.*—Deep-seated supra-orbital pain. Ordered two leeches to be applied to external angle of right eye. Patient can distinguish three fingers held at a little distance from the eye. *14th.*—Distinguishes between ring and little finger. Pain less severe. Excrescence of lid quite reduced. *26th.*—Daily reports favourable as to subsidence of inflammation and improvement of vision. Able to make out inch-sized letters. *15th May.*—Up to this date the surface of the cornea had a *ground glass* appearance, from the presence of innumerable minute ulcers. A number of these coalesced and formed a deep-spreading ulcer on the centre of the cornea, which obscured the vision, and caused great intolerance of light. In addition to the other applications, I prescribed a collyrium consisting of two grains of atropine dissolved in eight ounces of water. As the ulcer continued to spread, and was so deep in the centre as to threaten the different coats of the cornea, and even the lining membrane of the aqueous chamber, I touched the centre with a sharp pencil of nitrate of silver. This arrested the progress of the ulcer, but, as vision continued very

obscure, and I was anxious about the result, I consulted my friend Dr George Robertson of Glasgow. He approved of the course of treatment, and suggested, in addition, to drop upon the eyeball, once or twice daily, a drop of solution of sulphate of atropine (grs.ii. to ℥ss.), and to soothe the irritability of the system by opiates. Under this treatment the ulcer gradually filled up, the redness resulting from the enlarged vessels of the sclerotica and cornea subsided. Intolerance of light became much less, and vision so much improved that he could again distinguish letters of an inch size. *30th June.*—There has been a very marked improvement since last report. Patient can now distinguish the form and size of objects at a considerable distance. He can make out letters of a quarter of an inch, and read some words. The deep-seated pain and intolerance of light are almost gone. The iris is regular, of a natural colour, and free from adhesions. Sclerotica has almost its natural whiteness. Ulcer of cornea healed; there is an opaque cicatrix, which is gradually becoming more transparent. He is now able to return to his home in the country.

Remarks.—This case, from the first, involved great responsibility: the loss of sight to a working man is equivalent to the loss of his natural independence. The left eye was completely destroyed. There was some vision of the right eye, but it, too, was severely injured. So that I had to combat, not merely the danger of sympathetic inflammation, but the more dangerous inflammation resulting from traumatic lesion. Dr Robertson stated in his letter,—“As a general statement, such accidents as your patient has sustained are extremely unfortunate to vision. Still, the ulcer may fill up (provided the lining of the aqueous chamber does not give way), and the cornea regain, in the course of time, a considerable degree of transparency.” The successful issue of this case I ascribe very much to Dr Robertson’s valuable suggestion, the use of the solution of the sulphate of atropine, which had a most beneficial effect. At first I dropped it into the eye morning and evening, but, as the symptoms subsided, I applied it once daily. It invariably produced its specific effect—dilatation of the pupil—half an hour after the application.

CASE XIV.—*Rupture of Urinary Bladder and Urethra.*

John Downie, æt. 26 years, railway labourer. *7th April 1862.*—About noon to-day, while engaged at a cutting three miles from Stranraer, was struck on the loins by a quantity of earth, upwards of a ton weight, which unexpectedly fell upon him. On being extricated by his fellow-labourers, he was brought to his lodgings in town in a cart. During the journey he complained from time to time of pain in the lower part of the abdomen, with great desire, but inability to make water. I saw him immediately after his arrival. He continued to complain of pain in the lower part of the abdomen and loins, particularly on the left side. Some blood was oozing from urethra. He could not pass a drop of urine, though the desire to do so was great. Had passed none for several hours prior to the accident. Pulse strong, 90. To relieve him, and at the same time to aid the diagnosis, I introduced a middle-sized elastic catheter. About half a pint of bloody urine flowed, a third of it coagulated. Ordered a large hot poultice to lower part of abdomen. Applied three cupping-glasses to bruised loins, and extracted ten ounces of blood. From the first, suspicion of rupture of the urinary bladder occurred to me, and I resolved to watch the case narrowly. In about three hours I again visited him, and with much difficulty (on account of the instrument slipping into a tear in the urethra), on the third attempt, I succeeded in passing an elastic catheter. Half a cupful of pure urine flowed. It afterwards became very bloody, and, on pressing the left groin, a small quantity of pure blood was passed, which speedily coagulated. *Same evening, ten o’clock.*—Again urgent to be relieved. Failed, after repeated attempts, to pass a catheter of any size. Ordered a warm bath, and continued fomentations to lower part of abdomen. One o’clock A.M., *8th April.*—Still unrelieved; urgent to have catheter introduced. Again attempted, but failed. Requested Dr Robertson, Portpatrick, to meet me in consultation, without delay, when we again severally attempted, without and with chloroform, to

introduce the catheter, without success. He agreed in the opinion that the bladder was ruptured, the rupture extending through its neck to the urethra. On consultation, we agreed to perform perineal section, in order to get an instrument through the laceration in the urethra into the bladder. But first we explained to the patient and friends the nature of the proposed operation. It was acceded to. I had in readiness a sharp-pointed bistoury, a silver catheter No. 8, a female catheter, and some strong probes. The patient was placed under the influence of chloroform. Before commencing the operation, I again made a few gentle attempts with the No. 8 silver catheter, to pass it through the laceration in the urethra, and at the last moment I had the satisfaction of finding it slip into the bladder. About half a pint of the same bloody urine flowed, and, on coming out of the chloroform, patient felt much relieved. We agreed to fix the instrument in the bladder, by means of tape secured round the loins, and so to allow the urine to pass from time to time. Pulse at this time was 72, strong and bounding. Swelling and tenderness at lower part of abdomen, much more marked on left side. 10 o'clock A.M.—Pulse 102. Bloody urine still flows from catheter. Urinous odour perceptible in apartment. Ordered beef-tea, small quantities of wine, and the following prescription:—Submur. Hyd. gr.ii.; p. Opii gr.½;—fit pulvis. M.—To be given every second hour. Fomentations to lower part of abdomen. Two o'clock P.M.—Pulse 130. Small quantity of bloody urine flows from catheter. Not suffering much pain. Seven o'clock P.M.—Pulse 168. Fully a teacupful of bloody urine passed by catheter since noon. Pain more severe. Distension of abdomen increasing. Ten o'clock P.M.—Sinking rapidly. Pulse 240, which increased to 264 before I left the apartment. With great difficulty I counted the number of pulsations. Respirations 46, much impeded. Ordered wine in any quantity. Died following morning at half past six o'clock.

Remarks.—It would have been interesting, and made my report more satisfactory, to have had a post-mortem examination in this case, but, for family reasons, I did not even ask it. After death, however, by manipulations with the catheter, I found more distinctly a tear in the urethra, which appeared to me to extend towards the left side of the bladder. Based on the circumstances that pressure on the left groin distinctly caused blood to flow, that the swelling was more marked in that region, that the movement of the catheter inclined towards the left side, and particularly as the left side seemed to have suffered most, I am of opinion that the rupture commenced near the left side of the fundus, and extended through the neck of the bladder to the urethra. Evidently, from the symptoms, it was ruptured at a part covered by peritoneum, and that was a point of practical moment to determine, especially in giving a prognosis, which I did, at the first. I could not, by careful examination, detect any fracture of the pelvic bones, and there was no external abrasion. This case presented similar *general* symptoms to one recorded by Dr Ebenezer Watson in the *Edinburgh Monthly Journal of Medical Science*, vol. iii., New Series, p. 378, as having been treated by Dr Andrew Buchanan in the Glasgow Royal Infirmary in March 1846. In his case the patient survived forty-five hours, being three hours longer than the case I have now reported.

In connexion with this case, I give two cases of retention of urine which present features of practical interest. They are not recorded in the ordinary rotation of dates.

CASE XV.—*Abscess in Perinæum, causing Retention of Urine.*

J. B., æt. 9 years, residing eight miles from Stranraer. 30th March 1860. —Requested, at two o'clock, this morning to visit this patient, and relieve him of a “*stoppage in the water*”. When some distance from the house, I heard the cries of the little fellow, whom I found in perfect agony. He had made no water for twelve hours. Knowing that, in the absence of fever or some other cause, retention of urine is rare in one so young, I made a minute inquiry into the case, when I was informed that he had fallen on his breech a few days previously. I examined the perinæum, and found deep-seated fluctuation. On

making a free incision, an eggcupful of thick matter flowed: it contained no urine. Patient experienced immediate relief. The subsequent treatment was, a warm bath, and a mixture containing tincture of the muriate of iron. In a few hours he passed water freely, and was quite well.

Remarks.—Had the catheter, in accordance with the wishes of the friends, been rashly introduced in this case, it might have opened the abscess internally, and occasioned urinary infiltration. The prognosis I gave when I saw no urine flow from the incision was of course favourable.

CASE XVI.—*Retention of Urine, caused by a Calculus lodged in the Urethra.*

G. D., æt. 86 years. 12th April 1862.—Called at an early hour this morning to relieve the patient of retention of urine. Finding the bladder distended above the pubis, I was about to introduce an elastic catheter, when I observed a small white substance at the meatus urinarius, which appeared to me at first to be a small quantity of matter. On examining more minutely, I found it was a calculus, wedged in this the narrowest part of the urethra. I inserted carefully beyond it into the urethra a strong director, and forced it out. A small quantity of urine followed with considerable force. I afterwards introduced a middle-sized elastic catheter, and drew off a pint of urine. The old gentleman felt great relief, and was eloquently grateful. The calculus was round and regular, about the size of a field-bean, but much broader in the centre: it was a mulberry calculus. Up to the time of writing out this report—a fortnight afterwards—I have not had again to use the catheter.

Remarks.—Had the calculus not been perceived, the instrument would most likely have pushed it back into the bladder. Considering the urethra anatomically, we find that in the normal state it becomes gradually narrower from the bulbous portion to the external aperture. The practical inference to be deduced from both these cases is, to examine carefully into the *cause* of the retention prior to the use of *means* for its relief.

CASE XVII.—*Fracture of Malar Bone; Severe Lacerated Wound of Face; Comminuted Fracture of Scapula, with Effusion. Death in twenty-two hours.*

James Kelly, aged 43 years, butcher. 12th April 1862.—While in a state of drunken stupor, wandered along the line of rails at the Castle Kennedy station, and having lain down, before the engine of the luggage train leaving Stranraer at 12:20 P.M. could be reversed, he was struck by the safeguard of the engine behind the right shoulder. Before he could be extricated, he was ploughed along the ground about seventy yards. At fifteen minutes past one o'clock, one of the officials of the Railway Company requested my attendance. On proceeding to the station, I found the one o'clock train had been detained to take me to the unfortunate man's assistance. On arrival, I found he was severely mangled about the face. A wound on the right cheek, three inches square, extended beneath the eye, and to the forehead, exposing the inferior ridge of the orbit; the malar bone, denuded of periosteum, was fractured transversely, with depression of the superior fragment. The masseter muscle was exposed, and its fibres lacerated and torn. The mucous membrane of the mouth was also exposed, but not severed. Two large flaps hung over the cheek, one towards the mouth, the other towards the angle of the jaw. A large quantity of sand and small stones were indented into the flaps. The right ear was cut through in several parts. The substance of the lower lip was much lacerated and torn on its internal aspect. An engine, with waggon attached, was despatched from Stranraer station to remove him to his house in town. Before he was removed, I dressed the wounds in a temporary way. I afterwards cleaned out the sand, small stones, and debris, tied an artery which was bleeding at the external angle of the eye; cut away dead tissue and skin, and approximated the lips of the wounds with several stitches, so as to close completely the frightful gap, and give the patient something of his wonted appearance. Cold-water dressings were freely applied. On examining the limbs, I found he had also sustained a comminuted fracture of the right scapula, with considerable effusion. I applied a plaster over the fractured bone, and a

strong, broad bandage. The symptoms at this time were, complete insensibility; pupils insensible to light; puffing respiration; grinding of teeth occasionally; inability to swallow; pulse imperceptible; great depression. Ordered wine in small quantities, as soon as he could swallow. Seven o'clock P.M. (six hours after the accident).—Pulse 120, perceptible at elbow. Partially conscious. Swallowed a small glass of wine mixed with water. Restless, and with great difficulty kept in bed. Ten o'clock.—Symptoms much the same. Has been asking questions relative to the accident. 13th, Eight o'clock A.M.—Sinking rapidly. Pulse imperceptible, Respiration laborious, 36 per minute. Low muttering delirium. Died at half past ten o'clock, having survived the accident twenty-two hours.

Remarks.—This patient never rallied from the shock of the accident. Although the head was not injured the symptoms indicated a mixture of concussion and compression occurring in a person in a state of intoxication. It would be interesting to determine how far the impeded respiration was occasioned by the injury to the face or chest; it was probably caused by the former, as the laborious breathing came on so soon after the accident. Each of the injuries was sufficient to cause death, but the injury to the chest would scarcely have been so immediately fatal. Being a confirmed drunkard, he was a most unfavourable subject for rallying from such an accident.

CASE XVIII.—*Wound of the Dorsalis Pedis Artery, and Other Arterial Branches of the Foot. Ligature. Recovery.*

Robert Johnstone, æt. 23 years, Balsalloch (seven miles from Stranraer). 19th June 1862.—When engaged cutting wood with a heavy axe, he placed his right foot on the wood to steady it, and, having missed his aim, the blow fell on the foot, severing a strong boot and stocking, and inflicting a deep wound on the anterior aspect of the foot. He was removed to his house a short distance off, the wound bleeding most profusely. I was requested to attend, and, on hearing the nature of the accident, did so as quickly as possible. On exposing the wound, which was loosely covered, I found it to extend obliquely across the foot, commencing a little in front of the internal malleolus; but the wounded arteries were bleeding so profusely that I could not determine the amount of the injury. Pressure had no effect in restraining the hæmorrhage, so I applied a tourniquet over the femoral artery, which at once arrested the flow of blood, and enabled me to make a more minute examination. After removing clots of blood, and washing the wound completely, it measured three inches. All the soft tissues were divided, and, on loosening the tourniquet, I found that the dorsalis pedis artery and several branches of the tarsal arches were divided. After I had tied four arteries, the patient was secure from hæmorrhage, but the wound seemed *living* with the pulsations of the deligated arteries. It was brought together by four stitches, and cold-water dressing freely applied. Patient feeling faint, and having a very anæmic countenance, and a feeble pulse, from the excessive loss of blood, I ordered wine, and an opiate at bed-time. 22d.—There has been no return of hæmorrhage; wound looks clean, and there is almost no swelling. Removed the stitches, and ordered the water-dressing to be continued. 26th.—Wound healing. One of the ligatures came away with the dressings. The wound healed in one month, all the ligatures having separated within fourteen days; but there was inability to move the great toe for a much longer period.

Remarks.—I have never seen more profuse hæmorrhage from wounded arteries, except after amputations. Nothing effectual had been done to lessen it, previous to my arrival, so the flow was proceeding unrestrained. Had it continued much longer, the result would, in all probability, have been death from hæmorrhage. I succeeded in securing all the arteries without having to extend the primary wound. In a case which I treated ten days previously, one of the internal articular branches of the popliteal artery was wounded by a carpenter's adze. I arrested the flow of blood, as in this case, by applying a tourniquet over the femoral artery, cleaned out the wound, and

afterwards endeavoured to secure and tie the bleeding point. This, however, I could not accomplish, on account of its being so deep in the tissues round the joint. Considering that the artery was not large, I closed the wound with metallic sutures, and applied a compress and bandage. The hæmorrhage at once ceased; and, on visiting him some hours afterwards, I found there had been a little oozing, but no active hæmorrhage. I applied cold-water dressing, and ordered rest. The wound healed in a few days, without secondary hæmorrhage. But, in the case of Johnstone, the wounded arteries were of a much larger calibre, and no other treatment than their firm closure would have proved effectual.

CASE XIX.—*Fistula in Ano. Operation. Recovery.*

Mrs P., æt. 46 years, Stranraer. 22d July 1862.—Consulted me relative to symptoms which caused me to suspect fistula in ano. On examination, I found it was so; the internal opening being large enough to admit the point of the finger; its site, an inch and a half from the anal orifice. There was a hard swelling on the right gluteal region, but no opening externally, so it constituted a blind internal fistula. As her sufferings had been of the most excruciating kind for five weeks, I recommended an immediate operation, to which she readily consented. The bowels having been previously acted on by medicine, I made a puncture into the swelling large enough to admit a director, which I passed quickly through the intervening structures, and brought out at the internal aperture. The operation was completed in the usual manner, by cutting through the entire substance of tissues contained on the director. Pus mixed with blood flowed copiously, but there was no active hæmorrhage. Small pieces of lint were put within the lips of the wound, a T bandage applied, and an opiate administered. 25th.—On removing the lint, the wound was found to be granulating. Applied cold-water dressing. The wound healed in ten days, and the patient was quite cured.

CASE XX.—*Severe Injury from an Explosion of Gunpowder; Compound Comminuted Fracture of right Orbital ridge of Frontal Bone; Vision of right Eye destroyed; Vision of left seriously impaired.*

William Mars, æt. 21 years, railway labourer. 2d July 1862.—While engaged blasting rock on the Portpatrick contract, in company with two others, the gunpowder in a hole drilled in the rock for the purpose, ignited sooner than was expected, and the charge suddenly exploded in his face. One of the other men was struck on the right arm and leg; he escaped with fractured tibia and fibula, and lesser injuries. The accident occurred four miles from Stranraer, but I chanced to pass the place a few minutes afterwards, while proceeding to visit another patient. I superintended the removal of the injured man into the nearest house. I found Mars very much in the same state as Rae was, three months previously, (*vide* Case XIII). Face black and swollen. Superior eyelid of right eye severed transversely, exposing the orbital ridge of frontal bone, which had sustained a comminuted fracture. On parting the lids, which I accomplished with difficulty, I found that the different parts of the eye were not distinguishable. The organ was of a gooseberry green colour (the natural colour of the iris was light blue). Anterior chamber contained blood; state of iris and pupil could not be ascertained; cornea closely studded with particles of gunpowder; vision totally destroyed. On parting left eyelids, the left eye was found studded with gunpowder. Iris visible, but inferior half concealed by an effusion of blood into the anterior chamber; the humours escaped through a wound on the internal aspect of the cornea. Patient could distinguish light, but not the size or characters of objects.

The treatment consisted in extracting the gunpowder and other foreign matter from the eyeballs and eyelids, removing comminuted fragments of bone, closing the wound with metallic sutures, and applying water-dressing freely. As I wished him to be under my care for some time, I had him removed to lodgings in Stranraer, engaged for the purpose. 10 o'clock P.M.—Pulse 84. Quite conscious; dropped into eyes sol. sulph. atropiæ; reapplied water

dressing, and gave an opiate. 3d.—Pulse 90. Passed an easy night, both eyes discharging thin pus. So much of pupil of left eye as was visible, dilated (under the influence of the belladonna). 4th.—Pulse 84. Eyes still discharging. Cannot distinguish a finger while left eye is held forcibly open, but sees the object moving to and fro. Fleishy excrescence of lower lid to be touched with sulphate of copper. The atropine to be dropped in morning and evening. He was ordered an ounce of castor-oil as a laxative.

The progress of this case so closely resembled that of Case XIII., that a daily report would be almost a repetition of that already given; the points of difference in the injuries, the symptoms, and the treatment, I shall, however, very briefly allude to.

The symptoms developed a few days after the accident were, great swelling of the eyelids, deep-seated supra-orbital pain, lachrymation, and intolerance of light. As the blood became absorbed from the anterior chamber of the left eye, the iris was seen to be irregular, and patches of lymph were visible on its margin. A black stain caused by the gunpowder existed on the internal margin of the sclerotica, which ulcerated superficially, the remainder being of a bright red colour, and its whole surface fully injected. The cornea was free from ulceration.

The treatment consisted of local abstraction of blood by leeches, until supra-orbital pain and swelling subsided; dropping into both eyes a four-grain solution of sulphate of atropine daily; sedatives and laxatives as required. After persevering in this treatment about two weeks, and finding the inflammation did not yield quickly, I prescribed—

Sub. Mur. Hyd., grs.xij.

P. Opii, grs.ijj.—M.

Divide in pil. viii. One every night.

R Sulph. Magnesiae, ℥iv.

Aquæ, ℥xxv.—M. et S.

A wineglassful every morning.

Under this treatment there has been a perceptible improvement. The swelling and deep-seated pain have quite subsided; intolerance of light and lachrymation are much less; the iris is regular, and the lymph all but absorbed; redness of the sclerotica is gradually diminishing. Vision has daily improved until he can read words, the letters of which are a quarter of an inch in size. Altogether there is every prospect of a most satisfactory result, even more so than in the case of Rae, although he must remain a few weeks under treatment. With the right eye he can distinguish the flame of a candle; but its substance is so much injured that it will be comparatively useless.

Remarks.—In no class of cases is the result of remedies so apparent and immediate as in the eye. The belladonna, especially, I believe to be a most valuable agent in ophthalmic surgery. Dr M'Kenzie, in his practical Treatise on Diseases of the Eye, says, in discussing the treatment of ulcers of the cornea, "No remedy in my experience has proved more beneficial in ulcers of the cornea than belladonna. I do not at present refer to its dilatation of the pupil, although this effect is also of high importance, but to its anodyne effects upon the eye, whereby a healthy action appears to be induced in the ulcerated part, leading to its speedy cicatrization. I regard it as an essential part of the treatment in all cases of deep, and even in the more serious cases of superficial, ulcer of the cornea, to employ extract of belladonna, or solution of atropine."

My experience most fully corroborates this opinion; and not only in ulcers of the cornea, but in cases of inflammation of the tissues deeper than the conjunctiva, I have used the solution of atropine with great advantage, whether the inflammation was traumatic or idiopathic. In such cases the solution of nitrate of silver has always appeared to me to increase the inflammation and cause great irritation, though its advantage in superficial inflammation is unquestionable.

ARTICLE VI.—*On Excision of some of the Smaller Joints.* By
THOMAS ANNANDALE, M.R.C.S. Eng.

EXCISION of the larger joints is an operation which is now firmly established, and is most justly considered to be one of the greatest improvements in conservative surgery; but in regard to the smaller joints, this operation has as yet attracted so very little attention, that it has induced me to make the following remarks.

The operation may often be practised with advantage in cases of compound fractures, dislocations, or wounds of these articulations; and the successful results obtained in the cases related, will, I hope, tend to confirm this opinion.

In cases where these joints are affected with disease, the operation is not advisable, for the pathology of such diseases shows that most frequently the articulation is only secondarily involved, and consequently, unless the whole bone be removed, the operation is ineffectual. But if a whole phalanx or meta-carpal bone be taken away, it leaves the remaining portion useless, and by no means ornamental.

It is quite possible that the cases mentioned might have recovered without any operation having been performed, but they could not have done so without causing permanent stiffness of the joints concerned, and this would have left the fingers in a most inefficient state.

It is also well known that, in injuries opening into joints, the inflammation which almost invariably follows is severe in its character, and appears to be aggravated by the tension of the parts around, owing, no doubt, to the unyielding nature of the structures concerned in the formation of the joint. By removing a portion of the bones which assist in forming the joint injured, we not only diminish the severity of the inflammatory attack, but also prevent, or at any rate diminish, the stiffness which would otherwise result.

CASE I.—J. M., æt. 16, admitted into the Royal Infirmary, Edinburgh, Feb. 18, 1861, for an injury which he had received on the outer side of the wrist joint, from a stroke by the sharp edge of an axe.

On admission, there was a wound about an inch in length across the outer aspect of the carpo-metacarpal joint of the thumb; the wound communicated with this articulation, and had partially divided the extensor tendons of the thumb; the end of the metacarpal bone was projecting through this opening. An attempt was made to reduce the protruded bone, but it always slipped out of its place again as soon as the extending force was removed.

I therefore sawed off the head of the metacarpal bone, and brought the edges of the wound together with two silver stitches. The wound healed rapidly, and the patient was dismissed cured on

the 1st of March, his thumb having all its movements, with only very little stiffness.

CASE II.—G. M., æt. 7, admitted into the Royal Infirmary on April 1, 1861, having injured his hand in a saw-mill, half an hour before admission.

On admission, there was a wound across the back of the hand; the extensor tendons of all the fingers were divided; the metacarpo-phalangeal joints opened into, and the phalanges of the last two fingers sawn through immediately above their articular surfaces, so that the whole anterior portion of the hand was only attached to the posterior portion by little more than the flexor tendons and skin on the palm of the hand; the thumb was uninjured.

Thinking it right to give the hand a chance, I cut off the articular extremities of all the joints; the hand was then placed on a splint, and light dressing applied. The wound healed well; and on the 8th of May 1861, the patient was dismissed quite well, having a considerable amount of movement in the fingers; he was able to flex them, although not quite to their full extent, and grasp objects firmly, if not very small.

July 2, 1862.—To-day, I saw the patient. The appearance of the hand is more natural than I could possibly have anticipated; and, except that it is a little shorter, is as useful as its fellow.

I have given here a drawing of the hand (from Case II.) in the extended and flexed positions.



Part Second.

REVIEWS.

Geburtshülftiche Briefe. Von EDUARD CASP. JAC. VON SIEBOLD. Braunschweig: 1862. [*Letters on Midwifery.* By PROFESSOR SIEBOLD, etc. etc.]

OLD Dr Siebold, lately professor of medicine and midwifery in Göttingen, has done a rare work in medicine. He has written a book delightful to read, and one that will be read; not composed in the dignified, stiff, scientific manner that we must all generally adhere to, but in a homely, easy, epistolary style. He had long intended to write the letters and publish them, but his periods of relaxation had always been occupied by much-loved tours through Europe. Unfortunately for him, however, luckily for us, illness in the summer and autumn of 1861 prevented him making a journey abroad as usual, and gave him an opportunity of inditing these epistles to a dear young friend. The old man scarcely survived the production of the book.

In his first letter he commences an autobiography, giving very good reasons why such an account should be far better than the necrologist's. He divides his life into five parts,—that of his youth, which ends in Berlin in 1820; that of his university education in Berlin and Göttingen, ending in 1827; his life as a privat-docent in Berlin, ending in 1829; his life as a professor in Marburg till 1833, and in Göttingen till the present time. The Siebolds are an old medical family. Oken called them an Asclepiadic family. Our author's great-grandfather was state-surgeon and senator in Niedeggen; his grandfather was the famous operator, Carl Caspar, professor of surgery, etc. etc., at Würzburg. Carl Caspar's four sons all applied themselves to medical pursuits: Christoph, the eldest, was professor of physiology and of clinical medicine and midwifery in Würzburg; Damian, the next, was medicinal-director in Darmstadt; Barthel, the third, succeeded his father in the Julius hospital; Adam Elias, the youngest, was professor of midwifery, first in Würzburg, afterwards in Berlin. Adam Elias married the eldest daughter of Schäffer, physician to the Prince of Thurn and Taxis, in Ratisbon, and our author was their son. His uncle Christoph's only son was a physician in the Dutch service, and made a great reputation by his researches in natural history during a long stay in Japan. His uncle Damian's oldest son was a successful surgeon in Darmstadt. Two sons of his uncle Barthel are now physicians, and the author's only and younger brother is the

distinguished professor of zoology and comparative anatomy in Munich. Even female members of the family have betaken themselves to physic. The wife of uncle Damian studied midwifery under her brother-in-law, our author's father, in Würzburg, and practised in Darmstadt. This lady's daughter by a former marriage, Charlotte Heiland, having taken the name of Von Siebold, studied in Göttingen, obtained the doctorate of midwifery in Giessen, and practised in Darmstadt.

During his schooling Siebold paid much attention to music, and his father had him taught by a drummer in order to improve the use of his wrists. This love of music lasted all his life, and he made his powers available not only in private, but often also in public concerts. As a resident in Würzburg, he had his boyish experiences of the Napoleonic wars, which are ingenuously related. In 1816 he went to reside in Berlin along with his father, who had been appointed professor of midwifery there. He notices his lamentable deficiency in mathematics, for which he could never acquire a taste, and he thinks that this circumstance may explain why he has never invented any instrument—a result, however, which he is wise enough not to deplore. He was very fond of philological studies, and it cost him much pain to tear himself from them, at his father's urgent request, and devote himself to medicine. In 1820 he matriculated as *studiosus medicinæ* in the university of Berlin.

The account which Siebold gives of his university teachers is at once picturesque and amusing. He spent seven years in his medical studies, but the first of these was almost lost, being occupied by the military duties of his period of service. In this way, however, he learned blind obedience and punctuality, the latter of which qualities he was proud to retain to the last. He remarks that he used to mount guard before the palace of the Duke of Cumberland, then residing in Berlin, little thinking that he was destined one day to put on the professor's gown under him as King of Hanover; and he notices, in passing, that his father had, a short time previously, delivered the duchess, with much difficulty, of a young prince, who, in labour, presented the shoulder, the arm, and the navel-string. This prince is now King George V.

He studied botany under Link, anatomy under Rudolphi and Knappe, the history of the middle ages under Wilken, and logic under Hegel, whom, he says, he never in the least degree understood, and did not even once misunderstand! This subject, however, he pursued with advantage under Schleiermacher, and the history of ancient philosophy under Ritter. He also followed the literary and antiquarian courses of Wolf, Tolken, and Von Raumer. Rudolphi taught him comparative anatomy and physiology; Link, natural history, chemistry, and pharmacology; Berends, Horn, and Hufeland, pathology and therapeutics; Osann, *materia medica*; Rust, surgery; his father, midwifery.

He was Link's amanuensis and prosector, and he relates how the old man used to continue his work with candlelight, often lecturing by the light of tapers so dim that only the first bench of students could see anything. To complete his knowledge of osteology, our author used to teach it on Sundays, in his father's ante-room, to a class of about twenty fellow-students. Rudolphi was a great favourite. When consulted by a student, he was always kind, never offering him a seat, but, with his hands at his back, promenaded up and down his long workroom. With Berends, Siebold learned that medicine has an important classical side or aspect: he used to lecture in Latin on the aphorisms of Hippocrates. Horn was very different: a renowned practitioner, of vast experience, adhering to no school, he inculcated a simple mode of treatment, and was constantly iterating, "The school says so and so, but, on the other hand, experience says so and so;" "The school recommends such and such means, but all are useless." Hufeland, again, was the opposite to Horn. He carried about a dirty manuscript of fabulous age, from which he constantly dictated recipes, one after the other, saying, "If, however, this fails, recipe so and so." Of his father he relates, that he was so averse to the introduction of auscultation into midwifery, that he had to study the subject behind his back. On the first occasion on which Siebold attempted to apply the forceps, his father, seeing his difficulty with the second blade, pushed him impatiently aside, and operated himself—an experience of Siebold's which, he says, taught him to be very patient with his own pupils, remembering the painful feeling which his father's treatment excited in himself.

Now (1823), Siebold says that his father wished to give him the advantages of studying two years at Göttingen. He at the same time hints that his stay at home might have been disagreeable, for father was just about to marry a second wife who was younger than his eldest son Eduard. He was therefore packed off. His account of his happiness and diligence at Göttingen is delightful. He thought it the pattern of a university. Its excellent library was a great resort, and he asserts that to it and to this period of his life we owe his historical works on midwifery. Before leaving Göttingen, he secretly wrote with a lead pencil, on a press in the philological department, "*Valete deliciæ meæ*; 8 Sept. 1825." He hopes the librarians will not be very angry, for he has had much pleasure in noticing the inscription still there in later years.

Blumenbach (anatomy), Langenbeck (surgery), Himly (medicine), Stromeyer (chemistry), Conradi (therapeutics), Mende (midwifery), Marx (toxicology), were enthusiastically teaching above 200 students at this time in Göttingen. The hospitals, however, were in a bad state: that of Langenbeck was his private property.

The two years quickly fled, and he left his beloved Göttingen, resolved if possible to return to it—a wish whose accomplishment

he lived to enjoy. He went to Berlin, got a small room in his father's house, and became second assistant in his father's midwifery clinique.

Siebold now began to study midwifery particularly, and his position under his father gave him great opportunities for acquiring practical knowledge. He attended his father's lectures, and practised midwifery operations on the phantom. After written and oral examinations, he was made doctor on 29th March 1826. His dissertation was upon scirrhus and carcinoma of the uterus, with three cases of its total extirpation. On the 13th May 1826, he was surprised and pleased to receive from the University of Würzburg, his native city, the diploma of Doctor Philosophiæ. He had now to go through the searching and practical state examinations, and doing so successfully, he, on the 3d March 1827, obtained the regular approbation, with the note "very good," and the distinguishing mark of "operator." On the 15th April, he obtained the state approbation in midwifery.

He was now made first assistant in the lying-in institution, and soon acquired the rank of privat-docent, reading before the faculty a Latin essay on Cæsarean section, and giving a public lecture on artificial premature labour. Being now twenty-six years old, he began lecturing on theoretical midwifery to twenty hearers.

At this time all midwifery was, he says, divided into two schools, and he had to choose between them. The school of Osiander, distinguished for frequent interference with labour; and the school of Boër (often called the English school), distinguished for confidence in nature and rare interference. To illustrate this difference, it may be stated that there were years in which Osiander used the forceps forty or fifty times and oftener in 100 labours, while Boër reckoned only five or six forceps cases in 1000 labours; in 1816, he had only two forceps cases in 1530 deliveries. Siebold's father steered a middle course, having, however, an undoubted inclination towards Osiander's views. The son stuck by the father closely.

With these opinions he continued laboriously teaching publicly and privately. Then, in 1828, his father died, 53 years of age, unexpectedly, and leaving no will. His young widow had a little daughter of her own, besides three stepdaughters and two stepsons, of whom Siebold alone was able to provide for himself. The family was plunged in grief and in not a few difficulties about the disposal of the property, etc. Our author secured his father's library and instruments, but got very little money. He very zealously pursued his career, obtaining interim appointments to his father's offices until a successor was named, taking now the chief management of the Midwifery Journal, retaining a few of his father's old patients, gaining a little private practice for himself, and was able to keep up his father's carriage and horses, which, in Berlin, says a great deal!

Continuing his practice and his literary labours, especially pub-

lishing a german edition of Maygrier, he at length, in 1829, married Miss Nöldechen, thinking it bold if not rash to do so, for his position in the lying-in hospital was insecure under a new director. His wife bore him two sons, who died in infancy, and two daughters, one of whom is in Charleston, South America, married to an American lawyer, and the other stays at home.

Professor Busch of Marburg was called to Berlin, to succeed Siebold's father; and Siebold himself secured Busch's chair and other appointments. At first he was struck and his wife disappointed with the smallness and shabbiness of Marburg, and the frau was in despair at having to cut down her Berlin furniture to fit the little old house in the town. The university was not largely attended, but the intercourse with the students was on the best footing; and with Stein's old collection of instruments, added to his own private museum, Siebold managed to teach effectively. He found medical jurisprudence here combined with midwifery, as afterwards also at Göttingen, and had great satisfaction in preparing lectures on that subject. Very soon he and his wife liked Marburg, with its tranquillity, its small social circle, in which all professions necessarily were mixed, and its splendid scenery and fine country drives.

It was about this time that he paid a visit to Heidelberg to see Nægele. The account of their interviews is very refreshing, and the stories about Nægele very amusing. We are sorry we have no space to repeat them, for they are full of wit. Siebold almost adored Nægele, and was very much struck with his devotion to midwifery. It was some time after this visit that they went together to hear an opera at Mannheim; the prima donna had just finished an entrancing passage, and Nægele had no sooner cried "*sehr schön, sehr schön,*" than he immediately began, "Friend, do you really believe that the head of the child ever presents itself in labour in a direct diameter of the brim of the pelvis?"

His next trip was to Paris, and it afforded him little professional satisfaction. He found there much coldness, clap-trap, bad teaching, and no proper hospitals. His brief statement of his impressions is very interesting, and its sombre character is relieved chiefly by his pleasant intercourse with Deneux, whom he found to possess an excellent library, with many rare volumes, which he not only allowed Siebold to consult, but also to take home for leisurely perusal; and also by remarks on the improvements effected in midwifery and its teaching by the eminent Paul Dubois.

In 1832 Siebold attained the object of his long desire, being appointed professor of midwifery, etc., etc., at Göttingen. Thither he removed, and continued to reside till his death. In 1845, on the death of D'Outrepont, he was offered the chair of midwifery in his native town of Würzburg, but he could not find it in his heart to leave his beloved Göttingen.

In his seventh letter Siebold finishes his autobiography. He first gives an account of the warm reception he met with at

Göttingen from old teachers, friends, and fellow-students. He improved greatly the teaching of midwifery there, and was also very successful and popular in his lectures on forensic medicine. In 1835 he published a new edition of Maygrier's work; in 1838 the sixth edition of his father's hand-book. Feeling strongly the defects and incompleteness of Osiander's (1799) *pragmatisch-literarische geschichte*, and enjoying the inestimable advantages of the great library at Göttingen, he began, in 1835, his great work on the History of Midwifery. In 1839 the first volume was produced; the second volume, completing the work, was published in 1845. In 1841 he published his text-book of midwifery, and in 1854 a second edition, with woodcuts. Besides these numerous books, and others we may have omitted to mention, Siebold published two hundred and thirty-seven reviews and other articles in various German journals and encyclopædias. In addition, he never gave up his classical and philological studies, and produced, in his latter years, various contributions of interest in these departments of knowledge.

In this last part of his life, Siebold was long and severely afflicted with gout; sometimes he was so crippled as to be led to take up his abode for long periods within the walls of the lying-in hospital, using one of the ordinary beds for his couch. He made numerous journeys to the baths of his native land, but is forced to confess that they never had any decided effect on his disease. He also made numerous visits to the great schools of midwifery, to see the practice, and become acquainted with the men; and some tours of pleasure with his wife and eldest daughter. He was especially delighted with Vienna, and admired the enthusiasm and learning of its obstetricians. He thinks the midwifery clinique there is too vast for the student, and recommends the setting apart of a much smaller department for purposes of elementary education.

In the eighth letter Siebold considers the subject of midwifery teaching in the hospital—pointing out that practical teaching is the most important of all, and illustrating its influence by the example of face cases. These show the difference already pointed out between the meddlesome treatment of Osiander and the passive treatment of Boër. Disregarding the old views of Paul Portal (1685), and the modern views of Boër, a follower of Osiander would interfere in every face case, and probably, like Osiander, save only five children out of thirteen presenting this part; while a follower of Mende and of Siebold would lose almost none, as their experience proves. The use and abuse of the forceps affords another example of the importance of good teaching, on which he enters at some length, commenting on the extraordinary and admirable skill exhibited by such men as Mauriceau and De la Motte, in delivering in difficult cases before the discovery of this instrument. We cannot, however, agree with him in thinking that such skill, especially in turning, is now unattainable, and that the introduction of the forceps has in

this way led to any loss of obstetrical ability; and while we may join Siebold in not condemning Osiander and his followers utterly as having done no service to science even in their errors, we cannot admit, with him, that these errors, especially the too frequent use of instruments, have led to any gain in practical skill in the use of them.

The ninth chapter is an excellent discourse on midwives, their great position in times past, the history of their gradual loss of the whole midwifery practice of Europe, their present education and undeservedly ignoble position. Of the Russian midwives he expresses a very favourable opinion, but confers the highest praise on the system pursued in the Grand Duchy of Baden, and thinks it deserving of general imitation, with a view to secure the elevation of midwives and the benefit of the public. We can neither agree with Siebold, nor take time to point out how many remote evils the Baden system would entail. We merely remark that, in it, little is left to freedom, but all is put in shackles. Every woman is really delivered under state control, and every year the midwife has to give a detailed account of every case that has been under her care to a commissioner empowered to receive the reports. This visiting officer investigates her books, and puts her through an examination to ensure that she is keeping up her knowledge of medicine. The chapter ends with stories about midwives, and especially of one, in whose practice were included both rich and poor patients. When she was attending a rich woman she always compared the extent of opening of the womb to a ducat or some other gold coin; but when the woman was poor, pennies and twopenny-pieces were the standards of comparison. On this Siebold makes a very necessary parenthesis, saying that the student of midwifery, perusing the best authors, would need to have a numismatic collection in his possession, so numerous and various are the coins which authors of different countries use to aid the description of the opening of the uterus. Siebold wisely recommends the entire disuse of the numismatic method, and a resort to simple measurements.

The tenth letter, from a man of so great experience, is a very valuable account of how best to educate in midwifery. Three things are necessary—1. Lectures on the theory of midwifery; 2. Exercises on the phantom; 3. The midwifery clinique; all beginning in the fourth semester. Siebold condemns the modern textbooks and lectures which intrude the subjects of embryology, conception, coitus, etc., into midwifery, and justly thinks such a proceeding an evidence of poverty and weakness. In this opinion Nægele warmly joined. Rœderer's *elementa* are held up as a noble example of what all such works should be. Pregnancy, labour, and childbed are a sufficiently extensive subject without the addition of irrelevant matter.

In theoretical teaching the lecturer should use a text-book, should illustrate by preparations as far as possible, should hold regular

examinations, and give demonstrations in the lying-in chamber, by the microscope, etc.

For the student who has completed the regular course of instruction, and has begun to study in the school of nature, Siebold recommends the perusal of the text-books of Hohl and Scanzoni, also Grenser's edition of Nægele's *Lehrbuch*, the older writings of Nægele the father, and the work of Røederer to give him an idea of the old practice of midwifery. He should also make himself acquainted with the works of Oslander, and of his opponent Boër.

The eleventh letter inculcates the importance and utility of the study of the history of medicine and of midwifery. It points out the impropriety of commencing a course with this topic, which cannot possibly be understood till after the subject is itself comprehended. Siebold recommends it to advanced students, and young practitioners, who are sure to have plenty of time to devote to its pursuit.

The twelfth letter begins by showing that the establishment of lying-in hospitals was the source from which sprung all improvement in midwifery, and that this event, the establishment of chairs in universities, and the introduction of men into midwifery practice, were all closely connected.

Although, in Paris, the Hotel Dieu was a school of midwifery for women as early as the middle of the seventeenth century, and though private teachers had practical classes, it was not till 1835 that an hospital for the instruction of males was organized under Paul Dubois.

In Dublin, a lying-in hospital was opened in 1745, and at the same time several were established in London, but it was not till 1765 that males were instructed in the Westminster Lying-in Hospital established by the exertions of Leake.

The lying-in hospital of Strasbourg, the parent of most of the other like institutions on the continent of Europe, was established in the beginning of last century, and both men and women were instructed in it. The first teacher was Fried, who made the school renowned as a school. The great Røederer was one of his pupils, who, being called to Göttingen to teach anatomy and midwifery, established a lying-in hospital there in 1751. Van Swieten was a prime mover in erecting a maternity at Vienna, which was begun in the St Mark's hospital in 1752, and presided over by Crantz and Reuberger. Stein, the pupil of Røederer and Levret, established a maternity in Cassel in 1763; and, being subsequently translated to the university of Marburg, he founded another similar institution there. Another was begun in Jena in the last century; and Copenhagen had an excellent institution of this kind in 1760, in which Berger and Saxtorph have taught. Now, there is no university in Germany which has not an establishment of this kind.

The thirteenth letter discusses the subject of instruction in lying-in hospitals, and compares it with private practice.

The fourteenth letter gives at some length an account of the duties and position of the assistant in a lying-in hospital, and of his relations to the director.

The fifteenth letter describes the physical and psychical qualities that the accoucheur ought to possess.

The sixteenth letter enters upon the mutual relations of doctors and midwives, and gives an amusing account of the petty devices of the former to get practice. He admits the great influence of the midwives, but recommends the young doctor rather to try to gain the confidence of the established physicians, whose patronage will give him the way to solid prosperity. The chapter is of little importance to British practitioners, there being no class of midwives in good practice in this country.

The seventeenth letter is an easy discourse on the health of the accoucheur. In it Siebold shows that the dangers to health incurred by obstetricians are far greater and more numerous than those of surgeons and physicians, and that this is accompanied not only by bodily, but also by special mental harassments. He shows how the hasty are easily led to blame the accoucheur unjustly and thus embitter his days.

Rheumatism, gout, arthritis, he considers the diseases of accoucheurs. He and his two predecessors in Göttingen suffered much from gout. To protect himself as far as possible, the accoucheur should be carefully clad, live very regularly, eat and drink sparingly, go to bed early. He should not trust too much to his stock of health or his fine constitution. He should be cheerful and happy, amuse himself with the best light literature, with music, with public and private concerts, take an interest in painting, engraving, and sculpture. In his later years especially, he should make tours to foreign cities and countries, and take repose, in order to return to work with renewed zeal. Practitioners, he says, exaggerate the difficulties in the way of doing this. Lastly, it is to be desired that, after the age of sixty years is reached, the accoucheur should retire from active employment as soon as he feels his health begin to fail.

The eighteenth letter is an appreciation of the present position of midwifery and its relations to the other medical sciences. It begins by the striking comparison of the present state of midwifery and its former condition, when almost all assistance to the parturient female was summed up in a rude embryulcia.

The last four chapters of this pleasing book are devoted to a consideration of the peculiarities of the female sex, and are ended by Rudolphi's comparative statement of the bodily and mental peculiarities of man and of woman.

A Manual of Minor Surgery and Bandaging. By CHRISTOPHER HEATH, F.R.C.S. Churchill: 2d Edition: 1862.

THAT a second edition of this work has been required within a year after its appearance is not remarkable, for, apart from its other merits, the author has supplied what was previously a real want in surgical literature.

The many elaborate works on operative surgery, from Charriere, Dionis, Sir Charles Bell, down to Fergusson, and the latest work by Mr Stephen Smith of New York, furnish information to the surgeon-in-chief regarding the performance of what *we* call capital operations. Sir Charles, indeed, devotes part of the letterpress of his great Atlas to instructions to the house-surgeon; but these tell him only how to prepare for the great operations of his chief, what instruments to have ready, and how to hand them.

On surgical apparatus and mechanical appliances there are no lack of instructors, from Parè and Heister to Cutler and Chapman; but it was left for Mr Heath to supply a necessity which every one of the works mentioned seems practically to have ignored.

The theory of surgery is thoroughly taught to the student by many excellent systematic works, the surgeon is taught the operations, which the students again see him perform, in the various systems of operative surgery, but the minor details of the ward and the outpatient room are practically neglected. The proper treatment for emergencies in the waiting-room, the manipulations involved in setting a fracture, in strapping an ulcer, in dressing a burn, have hitherto been in the position of an old ballad, handed down by oral tradition from one set of house-surgeons to another, and have only now attained the dignity of written record.

Mr Heath has written his book for house-surgeons, dressers, and young practitioners, who have not had the advantage of being *internes* of a hospital, but there is much in the book for which the profession will thank him.

In Chapter I., on hæmorrhage, the causes of hæmorrhage are shortly yet fully described, and then the appropriate treatment for each, with a description of the various surgical appliances, as tourniquets, forceps, ligatures, etc. The author rather undervalues the toothed catch forceps, preferring a pair of ordinary dissecting forceps well serrated for the purpose of seizing an artery for ligation. In this preference we cannot agree with him. He finishes the chapter with long but intelligible directions as to tying a reef knot. The sentence in this chapter, however, which is the most precious to a young house-surgeon, is the following:—"There is, I believe, no hæmorrhage from the external surface of the body which cannot be arrested, at least temporarily." If this relieve any house-surgeon from the idea (never realized) of the

“bad bleeding case” which may come and find him powerless to arrest it, the book will have done a good work.

Chapter II. treats of wounds, bruises, sprains, bites, and stings, and the presence of foreign bodies in the various cavities and passages.

Chapter III. is devoted to the house-surgeon's favourite cases,—retention, hernia, paraphymosis.

Chapter IV. is a short one, added in the second edition, on the immediate treatment of cases of poisoning, with a few remarks on the distinction, often very difficult, between cerebral injuries, apoplexy, and alcoholic poisoning.

Chapter V. is devoted to the minor operations of surgery, and embraces some, which, in point of the difficulty encountered, and skill required, are really major operations, but which, from their urgency, generally fall to the lot of the house-surgeon.

The first and most important of these is tracheotomy, and Mr Heath's account of it is excellent. He recommends, and we think rightly, the operation *below* the isthmus of the thyroid, for though, by the depth in the neck and distance of the trachea from the surface, this operation is rather more difficult to perform than the one above the isthmus, these disadvantages are counterbalanced by the greater extent of trachea which can be exposed, and by the greater distance of the opening in the trachea from the disease of the *larynx*, for which the operation has generally to be performed.

The arrangements of the operating theatre, the treatment of the patient after an operation, strapping, bandages, fractures, and dislocations, with a short chapter on casetaking, give a comprehensive and very useful account of the duty of the house-surgeon to his patient while yet alive; and a short account of the method of performing post-mortem examinations may possibly help to remedy the very slovenly manner in which these are sometimes performed when by any chance the hospital pathologist is absent.

To the house-surgeon, and, perhaps, even to other professional readers, the introduction, comprised in ten pages, is the cream of the book. In all his hospital relations, to his surgeon, to his subordinates, to his patients, the few simple words of advice given him by a courteous gentleman cannot fail to be of use, while the shrewd common sense of the paragraph devoted to his relation to the law and to legal functionaries will help him in many a difficulty; and if the house-surgeon would only follow the advice given in the last paragraph about the management of his own health, fewer would break down under their work and worries.

A Handbook of Surgical Operations. By STEPHEN SMITH, Bellevue Hospital, New York: Baillière Brothers: 1862.

IF the value of a given work is to be tested by the manner in which it fulfils the intentions of its author, as explained by himself in

his preface, we fear that the volume before us must be considered a comparative failure.

"Prepared (the author tells us) at the suggestion of several professional friends in the medical staff of the volunteer army, it is intended as a small and convenient pocket-companion containing the details of the more common and important operations in surgery."

The shortest analysis of the book will show how far it fulfils these conditions.

The first chapter, of about forty pages, is devoted to the description of the necessary instruments; methods of bandaging, including strapping the breast and testicle; dressings; hæmostatics; and, lastly, vaccination, with an elaborate description of the apparatus required for that little operation.

In the next chapter we have, in forty pages, descriptions of the method of ligaturing nearly every artery of the body, beginning with the operation "for tying the ulnar in the palm at the radial edge of the pisiform bone," including ligatures of the internal mammary, of the vertebral in three different parts of its course, of the occipital in two, and ending with advice as to the manner of putting a ligature on the *arteria dorsalis penis!!!* The letterpress is accompanied by drawings, in which the limb is indicated by the vaguest possible outline; while the edges of the wound are held apart, and show a deeply-shaded and wonderfully distinct artery, vein, and nerve in their orthodox relation to each other.

Now, had this work been intended for an exhaustive *resumé*, and work of reference for future ages, describing all the methods by which arteries had ever been ligatured, we might have admired this chapter; but the army surgeon does not require to cut down on the occipital behind the mastoid process to check the bleeding from a scalp wound, nor is ligature of the common carotid the *usual* treatment for incised wounds of the neck. His aim will be to seize the vessel where it is injured, either at the original wound, or, if necessary, after having enlarged the opening.

In the very long chapter on amputation very many and various methods are recommended; six plans of amputation at the hip-joint are given fully, and *eighteen* modifications of these are more briefly hinted at.

The descriptions are full and generally transcribed from good, but often very opposing, authorities; but there are here and there slips even in the transcribing, as in page 160, where the account of Mr Teale's operation by rectangular flap is cruelly altered to nonsense.

The chapter on resections is at once redundant and deficient. Redundant—six closely printed pages being devoted to descriptions of the various methods of excising separate bones of the tarsus, which in military practice must be absolutely dependent on the nature of the injury. Deficient—resection of the elbow-joint having little more than a page, and the methods advised being either that

of Chassaignac, who uses a single incision and a chain saw, or that of the elder Moreau, which involves the inevitable destruction of the ulnar nerve.

The last chapter is a wofully curtailed, though frankly acknowledged condensation of Professor Longmore's excellent article on gunshot wounds in "Holmes's System of Surgery."

To the military surgeon we believe this book is useless; but there is in it a considerable amount of labour in selection and management of material, and it may be useful as an easily accessible reference to standard works on operative surgery, especially of the French school.

The Excision of Joints. By RICHARD HODGES, M.D. Boston: 1861.

SINCE the publication of Mr Syme's admirable monograph in 1831, hardly any subject has been so much discussed in surgical literature, nor has there been any advance in practice so important and valuable, as the substitution, in certain cases, of excision of a joint for amputation of a limb. The absolute confidence and certainty with which Professor Syme even then recommended excision of the shoulder and elbow as substitutes for amputation, contrast very remarkably with the guarded and cautious manner in which he suggested and described the excisions of the wrist, and of the joints of the lower extremity. We all know how the controversy has gone on, how—notwithstanding the marvellous success of the late lamented Mr Jones of Jersey, and others—the tide of professional opinion is tending back to where the great northern surgeon has long stood (according to some behind the age), so that now most hold with him that, except in rare exceptional cases, excision of the joints of the lower extremity for disease or injury, is *not* preferable to amputation; that, when disease has been allowed to go so far as to require, it has also gone too far to permit, excision of the wrist joint; while, on the other hand, excisions of the shoulder and elbow joint are not only far less dangerous than the corresponding amputations, but in properly selected, and properly performed cases, leave a limb hardly less useful than an absolutely healthy one.

Dr Hodges's monograph is at this time of great value. After a few pages of introduction, devoted to the history, progress, and results of excisions in general, as contrasted with amputations, he enters with great care and minuteness into the history of each and all of the special excisions, the various operations, and their results.

The cases which he has collected are arranged in tables, showing the authority, the age and sex of the patient, duration of treatment, and results.

He has brought together 208 cases of complete excision of the

knee-joint for disease: of these 106 recovered, 60 died, and 42 underwent subsequent amputation, of whom 26 recovered, 9 died, and in 7 the result is not given. Of the 208, 65 were from Mr Butcher's table, 35 from Dr Heyfelder's, and the rest from various sources.

Dr Heyfelder's results are very similar. He has collected 183 cases of excision of the knee-joint; of these 125 recovered, and 54 died; in 4 the result was not given. The mortality in these *recorded* cases is, from Dr Heyfelder's table, 1 in $3\frac{1}{2}$; in a summary of 233 cases, collected by Dr Krackowizer of New York, 1 in $3\frac{1}{4}$; and from Dr Hodges, 1 in $3\frac{1}{2}$.

From series of cases of such extent, and recorded with such care and minuteness, looking back upon the thirty years in which excisions have been practised—not with the prejudices of a combatant, but with the calmness of a historian—Dr Hodges has a right to draw “conclusions;” and the short paragraph which, under that name, he has appended to each of the six sections of his monograph, will thoroughly repay a careful study. To quote a sentence or two from the one on excision of the knee-joint:—

“That the small degree of success following the few cases of excision for traumatic cause, does not warrant inferences favourable to its future adoption as a substitute for amputation.” . . . “That excision for white swelling is followed by a mortality greater than that of amputation for the same cause, one death occurring in every $3\frac{1}{2}$ operations. Therefore, though occasionally yielding brilliant results, it is an operation to be practised with great reserve.”

It is a book well worthy the attention of every practical surgeon, giving him facts, from which he may draw his own conclusions.

Part Third.

PERISCOPE.

REPORT ON PHYSIOLOGY.

BY W. GILCHRIST, M.D., TORQUAY.

THE ORGANS OF CIRCULATION.

ON THE VELOCITY OF THE CIRCULATION IN THE ARTERIES OF THE HORSE, AS DETERMINED BY A NEW HYMODROMETER. BY A. CHAUVEAU.

THE general conclusions of M. Chauveau are as follows:—

A. In the great arteries near the heart, as in the carotid, at the moment of ventricular pulsation the blood is put briskly in motion with a velocity relatively very great, which may on an average be estimated at 52 centimetres ($20\frac{1}{2}$ inches) per second.

At the end of the systole of the heart, during the moment which immediately precedes the closure of the sigmoid valves, the movement of the blood decreases with very great rapidity, and becomes almost *nil*.

At the moment when the sigmoid valves are closed, the circulation receives a new impulse, which propels the blood into the vessel with an average velocity of 22 centimetres ($8\frac{1}{2}$ inches) per second.

After the closure of the sigmoid valves, the acceleration communicated to the movement of the blood, by the dicrotic pulsation which is due to the occlusion, generally decreases with a certain slowness. At the end of the period of repose of the heart, during the moment which immediately precedes a new ventricular systole, the average velocity of the blood is only 15 centimetres (6 inches) per second, and it often even happens that the circulation appears to be then completely arrested.

B. In the arterial branches at a distance from the heart the circulation is always comparatively more active than in the great vessels during the diastolic period of the ventricles, and the acceleration communicated to the current of the blood by the pulsation of the heart shows itself much more feebly. The impulse isochronous with the secondary or sigmoid pulsation is itself less perceptible, and may be altogether wanting.

C. The state of activity of an organ augments considerably the velocity of the current of blood in the arteries which belong to it. Thus, for example, the carotid, whilst the animals eat, when the muscles of mastication are in activity, transmits five to six times more blood than if these organs are at rest.

D. The arterial circulation is very sensibly modified during hæmorrhages, and the characters which it then presents cannot throw any light upon the state of the circulation in the closed arteries. Thus the circulation, which in a large artery is extremely slow and even *nil* during the diastolic period, becomes extremely rapid at this period, when there has been hæmorrhage. In the second place, the systolic acceleration, so evident in the closed arteries, is quite insignificant in the open vessels. Lastly, the acceleration due to the dicrotic or sigmoid pulsation, so constant in the closed vessels, no longer manifests itself in an artery which allows the blood to flow freely outwards.

E. The section of the pneumogastrics does not produce on the arterial circulation any modifications other than those which result from the more rapid succession of the movements of the heart.

F. The section of the great sympathetic, in paralyzing the coats of the vessels, and in dilating the capillaries, appears to render circulation in the arterial trunks slightly more active. But this acceleration, if it really happens, is in no case comparable to that manifested when the dilatation of the capillaries is produced by the physiological function of organs.

G. The arterial circulation is always much accelerated when the spinal cord has been severed from the encephalon by a transverse occipito-atloid section.

H. When the velocity of the arterial circulation is increased, in consequence of the dilatation of the capillaries, which facilitates the flow of the blood pumped into the aortic system by the contractions of the heart, the arterial tension is always proportionately lowered, to increase again, however, when the capillaries contract.—*Journal de Physiologie*, 1860–61.

ON ABNORMAL BRUITS IN THE VASCULAR SYSTEM. BY DR HEYNSIUS OF AMSTERDAM.

From experiments performed in 1854 the author obtained the following results relative to vascular bruits:—

1st, The "bruit de souffle" occurs when the liquid passes from a contracted to a dilated part.

2d, The bruit arises at the dilated part.

3d, The "bruit de souffle" depends exclusively on the velocity; the force, the lateral tension, and the resistance exercise no influence on its production.

4th, The origin of the "bruit de souffle" lies in the liquid itself. The vibrations observed in the walls of elastic tubes are transmitted vibrations. The

primary cause of the bruit de souffle is furnished by the particular movement of the fluid.

Weber confirmed most of these results, but a difference existed betwixt Weber and the author on two points:

1st, Weber found that with a certain velocity of current he could produce a "bruit de souffle" independent of any dilatation in the course of the tube, whereas Dr Heynsius regarded a dilatation as an essential condition.

2d, M. Weber regarded the vibrations of the wall of the vessel as the primary cause of a "bruit de souffle," whilst Dr Heynsius ascribed it to movement of the liquid itself.

From both of these authors M. Marey differs, in believing that the primary condition of the "bruit de souffle" is the rapid transition from a considerable tension to one less so. (*See our Report of last year.*)

Dr Heynsius takes exception to this conclusion. If the lateral tension is the principal condition of these bruits, it would be necessary to admit that they could not occur in the veins. The author believes the velocity to be the sole and essential condition.—*Journal de Physiologie*, 1860.

ON THE INTERPRETATION OF THE SO-CALLED AUTOMATIC MOVEMENTS OF THE CUT-OUT FROG'S HEART. BY DR F. R. GOLTZ.

The author attempts to prove that the experiments of Stannius on the frog's heart have as yet not been clearly explained. The facts observed by Stannius are the following:—A ligature placed round the bulbous entrance of the venæ cavæ into the right auricle stops the action of the whole heart in the state of diastole. A ligature placed round any portion of the auricles arrests the action of the heart below the ligature, whilst the portion above the ligature, together with the venæ cavæ, continues to pulsate. If a ligature is placed exactly between the auricles and ventricles, both continue to pulsate, but the ventricles more slowly. If, first, a ligature is placed round the entrance of the cavæ, and, then, another one round the commencement of the ventricles, the latter begin again to pulsate, the auricles remaining motionless.

The explanation of these facts hitherto given is that the ligature acts as a stimulus on the fibres of the pneumogastric nerve, and excites its inhibitory function. Goltz supposes that the ligature acts, not by stimulating, but by dividing the nerve fibres. To prove that the substitution of section is productive of the same effects as the ligature, the author performs this experiment while the heart is immersed under oil. As soon as the heart is taken out of the oil, and exposed to the stimulus of the air, the pulsation begins as if the section had been made in the air. From these and other experiments, Goltz infers that the heart with its ganglia has no self-moving power, and that its automatic action depends on stimuli proceeding from the bulbous dilatation of the right auricle formed by the entrance of the venæ cavæ. When this source of stimulus is removed, the heart remains quiet until it is again excited by artificial impulse.—*Virchow's Archiv*.

ON THE CAUSES OF THE ACTION OF THE HEART. BY DR F. R. GOLTZ.

This paper contains a continuation of the author's researches on the movements of the frog's heart; and the general conclusions to which his experiments on these animals lead are stated by him as follows:—

I. The pulsating portions of the heart of the frog collectively constitute a system of small independent apparatus, each of which possesses a central organ, consisting of ganglia.

II. These small central conglomerations can be thrown into a state of irritation by irritants of the most varied kind, and this state of irritation is manifested according to its intensity, by longer or shorter states of contraction of the muscular apparatus belonging to the central organ.

III. Amongst these irritants may be placed blood containing a certain amount of gas.

IV. Sudden contraction of one part of the heart acts as an irritation on the

neighbouring parts; so that, if a point of the heart is excited and contracts, the contraction of the remaining parts proceeds as a peristaltic movement, according to laws which are founded in the nervous collections of the ganglia. Every chronic contraction acts accordingly only by its manifestation, as a single irritant on the other parts of the heart.

V. The different parts of the heart are not equally sensitive to blood-irritation. The nearer a part is to the *venæ cavæ*, the greater is its irritability.

VI. The normal contraction of the heart results, according to the preceding, in a series of stages, so that its most sensitive part, namely, the *venæ cavæ* and sinus, is excited by the blood-irritation, and the remaining parts of the heart are induced to contract through the assistance of nervous connexions.

VII. The rhythm of the normal heart-movement has possibly its cause in this, that the blood-irritation, so soon as it has become strong enough to excite the ganglia, is removed from the ganglia by the following systole. As the irritant is rhythmical, so is the reaction.

In some remarks upon the action of the vagus nerve on the heart, Goltz seems to accept the hypothesis of Brown-Séquard; but the vagus is the nerve supplying the blood-vessels of the heart.—*Virchow's Archiv.*

ON THE CAUSES OF THE ACTION OF THE HEART. BY RUD. VIRCHOW.

In reference to the paper of Goltz, Professor Virchow recalls the principal results of his researches on embolism of the pulmonary arteries, published in his collected treatises, 1856. The principal conclusions were as follows:—

I. The most varied forms of asphyxia produce similar effects, and, as one of the most common, paralysis of the heart.

II. The proximate cause of paralysis of the heart in asphyxia is the want of circulating blood in the coronary arteries.

III. The circulating blood acts on the heart through the oxygen gas which it contains. In reference to the vagus nerve, Virchow thinks that its action is rather that of a direct inhibitory nerve for the nerves of the heart, as that it exerts an indirect influence on the nerves of the heart through the vessels, and the blood circulating therein. He thinks we may possibly have to do with three series of phenomena in reference to the heart's action:—1st, The supply of oxygen as the condition of the muscular function; 2d, the direct excitation of the muscular function through the nerves of the heart; 3d, the excitation of these nerves. If the muscular structure is incapable of its function, the excitation of the nerves can effect nothing. If the muscular structure is perfectly normal, but the nerves are paralyzed or controlled, then no muscular function can be expected. But it is very possible that the oxygen exercises also a certain influence on the ganglia of the heart, though it would not necessarily follow, can act only through the oxygen, that is, through the regulation of the flow of blood in the vessels of the heart, and not directly on the heart-ganglia. For a solution of these difficult questions, a further analysis of the elements of the problem is requisite.—*Virchow's Archiv.*

ON THE INFLUENCE OF THE NERVES OF THE HEART ON THE FREQUENCY OF ITS PULSATIONS. BY J. MOLESCHOTT.

The author, in reference to innervation of the heart, adopts the following proposition:—The heart is an organ provided with four motor nerves, all very easily excited. These nerves are the two vagi, and the sympathetics. These four nerves are united in a community of action by the medium of the cardiac ganglia, so that an excitation of one of these nerves is communicated to the other three. But it is not possible to exhaust permanently three nerves by the over-excitation of one; for the excitations sufficiently strong to produce this result would exhaust the vitality of the one nerve, and it could not communicate any effect to the other three.—*Journal de Physiologie.*

Part Fourth.

MEDICAL NEWS.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION XLI., 1861-62. MEETING X.

Wednesday, 2d July 1862.—JAMES SPENCE, Esq., President of the Society, in the Chair.

I. CASES OF INJURY OF THE HEAD.

Mr Spence showed two specimens of injury of the head. The *first* case was that of a young man, a gamekeeper, who, while engaged in a struggle with poachers, received a gunshot injury of the cranium. The shot appeared to have struck him *en masse* above the left ear, and then to have raked the head. When brought into the hospital, a few hours afterwards, a portion of scalp was destroyed, and the bone was exposed. The exposed bone was but little depressed, but presented numerous fissures. Mr Spence, seeing the great degree of comminution of the bone, and knowing that the inner table of the skull was in all probability more injured than the outer, sawed across a triangular portion of bone, raised it with the elevator, and then easily removed fifteen or sixteen pieces of loose bone. The dura mater was slightly scratched at one point, but otherwise appeared natural. It was, however, evident from the nature of the injury, that there was great danger of an unfavourable result. In the course of a few days, the dura mater became white and leathery, and finally sloughed, giving exit to a large fungus cerebri. Head symptoms manifested themselves, and the patient died eight days after he had received the injury. Mr Spence remarked that the injury in this case had of course been severe, and that although the dura mater had not seemed at the time to have suffered much, it had never recovered its vitality. The preparation now exhibited presented a beautiful example of fungus cerebri; and, as in all the cases of the kind which Mr Spence had seen, purulent matter was found at the root of the fungus; the pus was sometimes in the form of a single abscess, sometimes, as in the present case, in that of numerous small abscesses. With regard to the treatment of fungus cerebri, Mr S. might observe that a great change had taken place within the last few years; formerly attempts were made to keep back the fungating portion by means of compresses, but now the opposite plan was adopted—the surgeon removing any clots or loose portions of brain, in order to let any purulent matter which formed escape freely.

In the *second* case, the patient had been seen immediately, and from the nature of the injury, and the promptitude with which the necessary treatment was put in force, a more satisfactory result than actually occurred might have been anticipated. A young man received a kick from a horse in the right frontal region; he was slightly intoxicated at the time, and when brought into the hospital immediately afterwards was delirious, the delirium appearing to be due partly to the spirits he had drunk, partly to the injury he had received. On examination, there was found to be a compound fracture of the frontal bone; from the fissured appearance of the bone, Mr Spence anticipated the existence of a comminuted fracture of the internal plate. The wound in the soft parts was enlarged, the trephine applied, and it was then found that a portion of the external table was broken into three pieces, while portions of the inner table were found fractured and depressed. There was no puncture of the dura mater, that membrane presenting only a very slight scratch. The patient went on well for about ten days, when he had a slight

rigor; symptoms of meningitis showed themselves, there was paralysis of the left side of the body, and there was an occasional convulsion. As the dura mater presented a slight bulging, it was thought right to make a crucial incision through it, which gave exit to about two teaspoonsful of pus. As generally happened, however, the fatal results had been already produced, extensive effusion of pus on the surface of the brain having taken place. Mr Spence had no doubt, from the early period at which trephining had been performed, and from the appearance of the dura mater at the time of the operation, that the suppuration was owing to an effusion of blood which took place at the time of the injury between the layers of the arachnoid, or below the arachnoid. While this case proved that trephining would not always save the patient, it was evident that without that operation the patient would have been in a far more unfavourable condition, and hence the warrant for having recourse to it.

II. EXCISION OF THE ELBOW-JOINT.

Mr Spence showed preparations from two cases where he had lately excised the elbow-joint, and which presented a marked contrast to one another. The operation had been performed in the *first* case two or three months ago, on account of articular caries, abscesses having formed in the centre of the bones; in the *second*, the joint had been excised yesterday on account of synovial disease, the bones and the articular cartilages being scarcely affected.

III. URINARY CALCULI.

Mr Spence exhibited urinary calculi which he had recently removed by lithotomy. In the *first* case, the calculus, from its long neck, presented a very peculiar appearance. Before operating, Mr Spence had been under the impression that there were two calculi, but on seizing the stone with the forceps, although there was no obstruction, it slipped; the reason being that the point of the concretion could give no fixed hold to the forceps. Mr Spence then took a scoop and removed the stone with great ease; from its peculiar shape, it would be seen that while in the bladder it must have been very difficult to calculate its size, and the neck of the stone had been broken during sounding.

In the *second* case, there were two calculi. One was situated on the left side of the prostate, and was felt from the rectum as a large hard body. Mr Spence expected some difficulty in removing it, as he knew that, from the situation and size of the calculus it would prevent the knife being carried along the groove of the staff through the prostate. On dividing the apex of the prostate, however, he felt that there were two separate concretions, and the prostatic one being readily removed with the scoop, the incision into the bladder was completed with a probe-pointed bistoury, and the large vesical calculus removed with forceps. The two calculi had probably not been connected, but had been situated very near one another; the upper surface of one, it would be seen, had been grooved by the passage of the urine along it.

IV. PORTION OF FOOD IMPACTED IN THE LARYNX.

Mr Spence showed a very remarkable preparation, for which he was indebted to a former pupil. A little boy, between eleven and twelve years of age, had been for some time subject to paroxysms of difficult breathing, and in the intervals had huskiness of the voice. While at dinner one day, he was suddenly attacked with urgent dyspnoea, which his parents, however, believed to be merely one of his ordinary paroxysms. A medical man was immediately sent for, and arrived very soon; in the meantime, the parents had a warm bath prepared, which was the treatment usually adopted for the spasmodic attacks. On his arrival, the doctor had him put in the bath, and passed his finger into the pharynx; cold water was poured over the boy, and consciousness was restored. On being asked if he felt any pain, he placed his hand over the windpipe, and said "here;" and immediately expired. On post-mortem examination, the whole of the lower part of the larynx and upper part of the trachea was occupied by a piece of meat, so firmly impacted, that, as could be seen, a bristle could hardly be passed along. Under these circumstances, it

was very remarkable that the boy could have breathed for a single instant. In writing to make some inquiries regarding the history of the case, Mr Spence had been particular to ask whether the body might not have been pushed down to its present situation. The answer was decidedly in the negative, the medical man having merely swept his finger round the back part of the mouth. A number of enlarged glands had been found pressing upon the trachea, which had probably been the cause of the previous attacks of difficult breathing.

V. OLD DISLOCATION OF THE HUMERUS.

Dr John Struthers exhibited a specimen of old unreduced dislocation of the shoulder-joint, which he had met with in the dissecting-room. The chief point of interest was the elongation of the neck of the humerus, so that it resembled that of a femur. The old glenoid cavity was covered with long fibrous tufts. A new cavity was formed immediately in front of it, on the subscapular fossa, and was increased downwards off the scapula by some bony deposit, which was attached by ligament. Most of the new cavity was smooth, but irregular on the surface. The cartilage on the head of the humerus, except behind, remained smooth, although it had not pressed against the socket. It was easily bent in by the finger, the subjacent tissue yielding readily. The great tuberosity was raised like a trochanter major, and between it and the head, behind, there was a large irregular smooth articular hollow, nearly two inches in breadth. The angle between the old and the new glenoid cavities had rested here, the outer part of the hollow against the fore part of the old cavity, and the inner part, with a portion of the back of the head, had rested on the new glenoid cavity. The lesser tuberosity was seen in front, and a broad bicipital groove. The long tendon of the biceps retained its natural size. The opportunity of examining the state of the ligamentous connexion was lost by the maceration having been allowed to proceed too far.

VI. PERFORATING ULCERS OF THE DUODENUM.

Dr Haldane showed a specimen of perforating ulcers of the duodenum. The subject from whom the preparation had been obtained, was a man fifty-six years of age, who had been a patient under the care of Dr Sanders in the Royal Infirmary. He was admitted suffering from symptoms of heart disease in an aggravated form, and died about a fortnight afterwards. Nothing during life caused special attention to be directed to the state of the stomach or intestines. On post-mortem examination, a small quantity of a bloody fluid was found on the peritoneal coat of the intestines, and on the anterior surface of the liver. On raising the latter organ a small circular opening was observed in the anterior wall of the duodenum, immediately beyond the pylorus, the margins of which were covered with the same bloody fluid as had been noticed elsewhere. On laying open the duodenum, four ulcers were found in its first part. These ulcers were arranged in pairs, two being on the anterior, two on the posterior surface of the gut, and exactly opposite to one another. The upper pair were situated about an inch beyond the pylorus, and each of them had perforated all the coats of the intestine. The posterior was the larger of the two; it had about the diameter of a threepenny piece; the anterior was about half that size. The edges were sharply cut, as though portions of the gut had been punched out. The lower pair of ulcers were an inch lower down than the upper; in this case too the ulcer on the posterior surface was the larger; these ulcers were smaller than the others; they had partially perforated the muscular coat. The other lesions found were, great dilatation of the left ventricle, dilated tricuspid orifice, atheroma of the aorta, pulmonary apoplexy, and congestion of the liver and kidneys. Dr Haldane remarked that the ulcers in this case had precisely the same characters as were presented by the simple or perforating gastric ulcer. This lesion, as the name indicated, was generally limited to the stomach, while occasionally, though rarely, as in the present case, the disease was found lower down. Dr Haldane was not, however, aware that such ulcers had ever been found lower down than the duodenum.

The arrangement of the ulcers in pairs was also worthy of remark. The same arrangement was occasionally, though not commonly, found in the case of the stomach.

VII. LACERATION OF THE JEJUNUM.

Dr Haldane would remind the Society that he had lately shown a preparation of laceration of the jejunum, where the injury had been occasioned, not by violence applied from without, but apparently by a violent muscular effort. In the case which he had now to bring before them, a severe external injury was the cause of lesion. The circumstances under which it occurred were the following :—Three men engaged in repairing the outside of a house were working upon a platform suspended by ropes; one of the ropes gave way, the platform turned over, and two of the men were precipitated to the ground, a height of between thirty and forty feet; the third man was saved by clinging to a rope. The two injured men were brought to the hospital; one of them was in a state of collapse, and only survived eight or nine hours. On examination, there was a fracture of the sternum between the third and fourth ribs, a rupture of the liver, a fracture of the first lumbar vertebra, of the left femur, and of the right os calcis; finally, a laceration of the jejunum. The last-mentioned lesion was situated between four and five inches from the commencement of the gut, and was about half an inch in length. The edges of the laceration were ragged, and the injury of the serous coat of the intestine was nearly twice as extensive as that of the muscular and mucous coats. There was no trace of peritonitis. The other man appeared at first to be going on well, but bad symptoms set in, and he died on the tenth day after the fall. On examination, there was a fracture of the sternum between the second and third ribs, and the common cartilage of the seventh, eighth, and ninth right ribs was torn from the sternum; pus was found in the anterior mediastinum, and there were numerous secondary deposits in both lungs.

VIII. MALFORMATION OF THE HEART.

Dr Stevenson showed the malformed heart of a child nine years old, who had died of a head affection. The child did not appear to have been cyanotic from birth, but symptoms set in shortly afterwards. When first seen by *Dr Stevenson*, the nails had a clubbed appearance, and great cyanosis was brought on by the slightest exertion. On auscultation, an intense murmur was heard with the first sound of the heart at the base, a little to the left of the sternum. The child died of a head affection, the symptoms of which were of three weeks' standing. On examination, there was found to be an abscess occupying nearly the whole of the left cerebral hemisphere, but not communicating with the lateral ventricle. Another interesting feature in the case was, that a younger brother of this child presented symptoms of cyanosis, and that in him also there was a cardiac murmur, loudest to the left of the sternum.

Dr Haldane had drawn up the following account of the heart exhibited by *Dr Stevenson* :—

The heart was somewhat enlarged, and of a more rounded form than usual. The aorta was wider and thicker, the pulmonary artery narrower and thinner, than natural. On laying open the heart, the ventricles had about an equal capacity, but the walls of the right were markedly thicker and stronger than those of the left. On testing the valves, the pulmonary were incompetent, the aortic were barely competent. When the heart was fully laid open, there was found to be a deficiency in the ventricular septum, close to the base of the heart, immediately below the junction of the posterior and right semilunar valves. The opening was of an irregularly rounded form, and admitted the point of the thumb. In consequence of its presence, the aorta communicated freely with both ventricles. The entrance from the right ventricle into the conus arteriosus was much contracted, and converted into a slit, and was surrounded by a rim of thickened endocardium. There were only two pulmonary semilunar valves, with no trace of a third; the two were equal in size, and were thickened so as to be of almost fleshy consistence. The aortic valves

were of natural size, but were slightly thickened. The mitral orifice was natural, the tricuspid dilated. There was a small valvular aperture in the situation of the upper part of the foramen ovale, but the membrane was quite large enough to close the opening. The ductus arteriosus was converted into a cord, and its cavity was obliterated.

IX. TREATMENT OF TÆNIA BY MALE-SHIELD FERN.

Dr Alexander Simpson showed the head of a tapeworm, which had been passed after a dose of the etherial extract of the male-shield fern. A dose of the same medicine had been administered a few weeks ago, and had procured the passage of a great quantity of the worm, but without the head. On the second occasion the drug had been successful.

X. INJURY OF THE FRONTAL BONE.

Dr Watson showed the right half of the frontal bone of a young girl of six years of age. She had fallen from the top of a hay stack, a height of about 10 feet, pitching on her head upon a stone pavement. The anterior part of the vertex had come in contact with the ground, the scalp was lacerated, the brain substance had escaped in some quantity, blood flowed from the mouth and ears. The right portion of the frontal bone now shown was displaced downwards towards the orbit, and outwards tearing the forehead, so that the orbital plate stood perpendicularly upwards with the intracranial surface looking outwards. The bone was so completely detached from its surrounding connexions as to require its removal, along with some smaller fragments which had been displaced inwards upon the *dura mater*. The wound in the exposed *dura mater* was small, some pulpy brain substance oozing from the aperture. The integuments were laid down so as to protect the membranes, and three points of wire-sutures introduced to keep them in position. The child lived for a fortnight in a half comatose state, leading a vegetative life, with a quick feeble pulse, becoming daily weaker, and at the end of this period died comatose. No sectio was permitted.

XI. ON THE RADICAL CURE OF EXOMPHALOS IN THE ADULT.

Dr P. H. Watson read a paper on this subject, which will be found at page 236 of this number of the Journal.

Mr Spence had listened with interest to *Dr Watson's* paper. He thought, however, there was one danger to be apprehended, not so much however of wounding vascular structures as of puncturing the intestine. He had always found, in operating in cases of ventral hernia, that the opening by which the gut emerged was very small, and, from the position of the great intestine, it was very apt to be wounded at the time when the stricture was divided. Even in *Wutzer's* operation, two or three cases had been recorded where the gut had been perforated. In the operation proposed by *Dr Watson*, there was a still greater risk, for here enough of the fibrous margin of the opening must be taken in to allow us to draw upon it. Of course, however, if the operation proposed was a good one, we were not to be deterred from its performance by the existence of a certain degree of risk.

Dr Keiller thought that chloroform would be very useful in preventing projection of the intestine, and so in diminishing the risk of its being wounded. He had seen numerous cases, especially after childbirth, where the recti muscles had separated at the umbilicus, and a sort of exomphalos been formed. In some cases it was very difficult to reduce the hernia without giving chloroform, which relaxed the muscles, especially the diaphragm, and so prevented protrusion of the intestines from taking place. As to exomphalos in children, pressure was enough if it was properly applied. Anything which tended to prevent closure of the opening was, of course, injurious; hence the means employed should not press into the opening, but laterally. It was also important to prevent the child from crying much, and hence every source of irritation should be carefully removed.

Dr Watson would only allude to what *Mr Spence* had said regarding the risk of injuring the bowel. No doubt, if the intestines were adherent to the wall of the sac, there might be a risk, but when the hernia was easily reducible, and was followed cautiously by the finger, the only thing which ran a risk of being wounded was the finger of the operator.

PROCEEDINGS OF THE EDINBURGH OBSTETRICAL SOCIETY.

SESSION XX.—MEETING XIII.

July 3, 1861.—*Dr Keiller*, *President*, in the Chair.

I. RECURRENT HEMIPLEGIA DURING PREGNANCY.

Dr Andrew Inglis read the following notes:—"Mrs Kerrie, age 36, seen 1st May 1859. Her friends told me that while talking that night she suddenly staggered, and was unable to finish her sentence, and when prostrate the face and extremities were slightly convulsed. When she regained her consciousness she was still unable to speak, her face was flushed, and she felt a dull beating pain in the left side of the head, while the ear of that side was deaf. Although there was no difference in the pupils, the right eye was considerably injected, and the sight impaired. The tongue was protruded to the left side, and the whole face was drawn to the left also. The right arm was partially paralyzed, and the index finger had lost all motion and sensation. She expected to be confined immediately, and the membranes had ruptured some days ago, but without pain. This is her fourth confinement, and on each previous occasion she has had convulsions. Since the membranes have ruptured she has had an uneasy sensation round the loins, but not amounting to pain, and she has made but little urine during that time. The pulse was weak and rapid. I ordered a large sinapism to the back of the head and down the spine, and also over the loins, the feet were immersed in water as hot as she could bear, and a smart purgative as soon as possible. I could obtain no urine.

2d May.—The paralysis had extended over the other side of the face, and the head was worse. The eyes were both affected, and the skin of the face without feeling. The deafness was in both ears, and communication almost impossible. The tongue was put out straight with great difficulty, and deglutition was impeded. The bowels had been moved freely, but still no urine. I obtained a small quantity by means of a catheter, but could not find any albumen nor any other abnormality, and the microscope gave the same negative result. I ordered twelve leeches to the back of the neck, and a strong diuretic, and in the evening she was much better.

3d May.—On the following day I found her improved, and able to write a little: she hears and sees better, but only on the one side.

4th May.—I had wished to keep her on spare diet, but she would not obey, and ate a full meal of butcher-meat, and I found her as bad as ever in consequence; so the leeches were again applied, and the symptoms abated as before. I then determined to wait, and see how much depended on her pregnancy, and, except attending to the bowels and kidneys, nothing was done, and she remained very deaf and quite dumb until the 3d of June, when labour commenced. She had a few lingering pains, and on the 4th she gave birth to a healthy child. The paralysis disappeared during the labour—which was very easy. From that time until December 1860 she has had good health, but being pregnant again, in the fourth or sixth month she had another attack, which destroyed the power of the whole of the left side. For this she went into hospital, and I have not been able to get a full account of the case while there, but she left much in the same state. During the month of March 1861, I called and found her in bed from the paralysis, but her general health good. I proposed no treatment, but trusted to her coming all right after delivery. On the 18th

April, I called and found her up and going across the floor with a crutch; she said the pains had come on through the night, but that they were not severe yet, and she had several every night and morning until that day month when she was delivered. The labour was not so easy as the last, and the child was much larger than any of the others she had had. She was up on the tenth day, and can now go about the streets without a stick, though somewhat feebly; no other symptom of paralysis being present. [She has been seen in July 1862, and seemed to suffer from slight mental aberration.]

Dr Keiller remarked that this patient had been under his care in the Royal Infirmary, when her pregnancy was advanced a little beyond the fourth month. Whilst under his observation he had thought her inclined to exaggerate her ailments, for sometimes she could be made to move her arm when her attention was purposely distracted from it.

Dr Myrtle had a case where in several of her pregnancies the patient had had partial paralysis of both hands, both the motory and sensory powers having been impaired. He (*Dr Myrtle*) would be afraid in such a case as that of *Dr Inglis*, that ultimately the patient might become affected with some form of permanent cerebral disease.

Dr Wilson stated that he had had a somewhat similar case under his care, where anæsthesia came on in the hands at each successive pregnancy, unattended, however, with any loss of power; and in her subsequent pregnancies he had come to regard it as one of the symptoms of her being in that condition.

Mr Pridie gave the history of an analogous case. 12th Jan. 1851.—I was requested to attend Mrs A., aged thirty-nine years, then at the full time with her eighth child. Five months previous, after some days of hard work at her employment as a washerwoman, she felt unwell, and during the night was disturbed by one of her children; on attempting to get out of bed she found that she had lost all power over the left side, and that a blackish appearance had come over the left leg and arm (such were her words in expressing her condition), accompanied with nearly complete loss of vision in the left eye. I had never seen her during pregnancy till three hours before delivery; she was then in labour, and during the interval betwixt the pains she lay quite powerless. For five or six hours previous to labour coming on, she had suffered from pain stretching down the spine and left side, and most severe down the left leg to the toes, where, from her own and her husband's description, there had been complete loss of sensation. On making an examination, I found the os uteri well dilated, and a very capacious pelvis; the pains were severe but they looked to me to be powerless. I gave her repeated doses of the infusion of the powder of ergot, which appeared to have decidedly an effect in strengthening the labour pains, and at the same time to increase the intensity of the pain down the spine and left leg. On delivery, the power over the left side began to return, and by the following morning the hemiplegia had completely disappeared, and the sight of the left eye had returned: the child was of the full size and healthy. From her own account, which was confirmed by the medical man who attended her eight years previously, when pregnant of her fifth child, about fifteen weeks before her delivery, while engaged as a laundress, she was suddenly seized with loss of power of her right side, and at the same time with amaurosis of the right eye. She went to the full period, and was delivered of a healthy infant, still alive. For a day and night before labour pains came on, she suffered from pain in the spine and right side; immediately after delivery the paralytic condition gradually began to disappear, and she quite recovered the power in the side; the sight of the right eye at the same time returned, yet there remained so much of the amaurotic look in that eye at the time I first saw her, three years ago, when attending at her house, that I detected it without being aware of her history. She was pregnant six years ago, and again four years ago, and on neither of these occasions were there any return of hemiplegia. She was free from pain of any consequence in the head during both of these attacks.

June, 1854.—Mrs A. was delivered of another child five months ago, and had

no return of paralysis. Vision in her left eye is as good as ever it was, while the right eye continues a good deal impaired.

II. UNDESCRIBED CAUSE OF DELAY IN LABOUR.

Dr James Sidey gave the history of a case of tedious labour that had lately come under his observation, where the presentation was natural, and the pelvis of ordinary dimensions, but the head remained many hours impacted in the brim before the pains succeeded in forcing it through. After the birth of the child, he had found the face to be unusually broad; and on comparing it with the measurements of some other infants of normal dimensions, he had found it to measure, from one malar protuberance to the other, fully a quarter of an inch more than the largest of the others. He had not been able to meet with any notice of this increase in the size of the malar bones, as a cause of delay in labour; but if attention were directed to the subject, it might prove to be a more frequent cause of tedious labour than at first sight we might imagine.

III. IMPERFORATE ANUS.

Dr Bruce read the following notes:—Imperforate anus is a congenital imperfection, of which there are several varieties. Examples of two of such I am enabled to give you an account of, as having been under my care. One of them happened several years ago, and was an example of that variety in which there is no opening whatever externally, and scarcely even any indication of one. The other occurred quite recently; and in this case the sphincter ani was apparently complete, but the opening internally terminated a short space above. The simplest of all the cases of imperforate anus are those where there is nothing but a thin membrane at the anal aperture, requiring simple division and attention to keeping the parts open until all risk from too great contraction during the healing process is over. All others are attended with danger proportionate not only to the extent of parts requiring division to allow the contents of the intestinal canal free egress, but also to the nature of any other imperfections which may and frequently do co-exist with such a malformation.

CASE 1. In the year 1855, July 9th, I attended Mrs G. in her confinement, and her child when born appeared to have nothing peculiar about it except that it had a supernumerary finger on one hand, very small but perfect, and connected only by the integuments to the finger. Nothing further was discovered until next day, when it was found that, although castor oil had been given, the infant had not passed anything by the bowels; it also seemed very uneasy, and kept constantly pressing down. It was then ascertained that there was no external opening to the bowel, and there was no indication of it terminating merely a short way up.

Having obtained the advice of Mr Spence, it was agreed to leave the child alone for another day, to allow the bowel to become further distended.

Next day, 11th, there was no further evidence of a near termination of the canal externally, and the operation was then performed by Mr Spence, having nothing to gain by waiting longer. An incision was cautiously made in the natural direction, and had to be extended about two inches before reaching the bowel; great care being necessary in the division, in consequence of the bladder not having been emptied for about twenty hours previously, and not being able to introduce a catheter.

The bowel, much distended, having been reached, an incision was made, although with much difficulty, owing to the small amount of space, and from the fear of injuring neighbouring parts. The meconium now came freely away, facilitated by pressure on the abdomen, which soon felt much softer, having been very tense previously. The infant did not appear to suffer much during the operation, and took the breast in the course of the day, which it had previously refused. Altogether it was very much relieved by the operation. A little *sp. aeth. nit.* was given, and precautions taken to keep the passage open. Next day, the infant was considerably better, but having made no water, it was attempted to introduce the catheter, but unsuccessfully. During

all this day the child's appearance was good, and it took the breast freely. Tents were passed occasionally to prevent contraction.

Next morning, a No. 1 flexible catheter was introduced, but scarcely any urine came away; though a little was passed in the course of the day. The day following the child was not so well; it refused the breast, and appeared uneasy, although the bowels continued to be freely moved. After this the child would not swallow anything, got worse and worse, and gradually sank, there having been no tenderness over abdomen, or evidence of inflammatory action.

Post-mortem. No evidence of peritonitis existed. The bowel terminated about two inches from the natural place, and the opening made was quite free. One of the kidneys was found to be completely abnormal, and to be composed of a number of cysts, the ureter being closed and preventing any communication with the bladder on that side. The other kidney was similarly affected, but to a less extent; thus accounting for the small quantity of urine passed, and also in some measure for the fatal termination of the case by uræmic poisoning, and taking away the regret so far as the fatal result, as the infant could not long have survived with such an affection of the kidneys.

CASE 2. Mrs P. was attended by me on the 7th June last, and was delivered of a child apparently at the eighth month; it was small, but healthy enough to appearance, and there was apparently nothing wrong with it. Next day I was informed that there had been no evacuation by the bowels, notwithstanding the administration of castor oil. A glance was enough to show that there was something far wrong with the infant; its countenance was expressive of suffering, and had a peculiar colour; it had been moaning all night, and very restless and uneasy, and the abdomen was very tense.

Finding the anal aperture apparently all right, I ordered an injection, but, first, taking a small piece of soap, I passed it upwards; it met with some resistance to its progress, and on taking away my finger the soap was immediately expelled. I at once passed my little finger, and found nothing but a shut sac, and pretty firm pressure could not make any further advance, but felt the counter pressure of intestinal contents above. I again obtained the services of Mr Spence. A small elastic catheter was passed, but scarcely any urine came away. He then passed the long straight bistoury carefully, and made a free opening into the bowel: very little blood was lost.

The meconium now passed freely away, and the infant at once experienced relief. Directions were given to pass the little finger occasionally to act as a tent to keep the parts from contracting.

9th.—Countenance still yellow; no pain is now experienced, except when having passage; a little blood has come away now and then. On passing my little finger, found the passage quite free. The little patient had slept well all night. There is little further to say with regard to the case, except that it continued to progress very satisfactorily, and the opening at the present time shows no disposition to contract, and the child is apparently quite well, and likely to continue so.

It must also be mentioned, that there was found to exist in this child another imperfection,—viz., cleft palate, thus bearing out in this case, as well as in the former, the fact which has been frequently noticed, that where an imperforate anus exists other malformations are not unfrequently present also.

Dr Keiller had seen several instances of this kind of malformation, and had operated on a few cases. One of the most interesting that he had seen was the case of a girl seven years of age, in whom nature had effected a kind of cure, by producing an opening in the recto-vaginal septum, through which the fæces made their escape. There was no evacuation from the bowels for two days after birth, and the child seemed in great distress; after which a discharge of fæculent matter took place from the vagina, and the fæces had continued to pass through this channel in a more or less fluid form up to the period when he saw her. He determined to try and afford her some relief from her unfortunate condition, and succeeded in making an artificial anus, by first passing a curved

sound through the fistulous aperture in the vagina, and then cutting down upon it in the perinæum in the ordinary direction of the bowel. The opening contracted, however, and closed, and he had to repeat the operation. To prevent the chance of its again closing, she was made to wear silver tubes, the orifices of which were plugged with corks. These she was obliged to wear for a considerable length of time, but whenever they were removed, and the case not properly watched, contraction again occurred; when he last saw her in 1846, the fæces came partly through the artificial anus, and partly through the vagina. He believed this patient to be still alive; and the question was whether the recto-vaginal fistula had been congenital, or had been produced subsequently by a rupture of the over-distended rectum. His own impression now was that it must have been congenital; and that the aperture was surrounded by a kind of muscular ring or sphincter, till the accumulated matter forced its way through it.

2. He (Dr Keiller) had also seen in Dundee, along with Drs Lyall and Nimmo, another case where the rectum ended in the bladder of a male infant, which used to pass liquid fæces from time to time through the penis. They tried to remedy this state of matters by cutting down upon the bladder through the perinæum, as in the median lithotomy operation, and for a time the urine and fæces all escaped through the artificial opening thus produced, but it eventually closed up completely. The child died after several operations, when it was found that the rectum crossed to the right side of the pelvis, and terminated in the bladder from the right lateral aspect.

3. Dr K. also cited the particulars of another case, of considerable interest, and remarked that, out of all the cases that he had operated on, he had only seen two where it was ultimately successful. The failure of the operation was due to the great tendency of the part to contract and close in healing; and to prevent this it was necessary to bring down the mucous membrane and stitch it to the cutaneous margin—a proceeding that was not always very easy of accomplishment, where the cul-de-sac was deeply situated. He had had a note lately from Dr Sclanders of Nairn, describing a case in which he had operated in this manner, but the child had died.

Dr Alexander R. Simpson had seen his uncle operate in one case where the end of the bowel reached to within a quarter of an inch of the cutaneous surface; and in that instance the frequent use of a tent, and the natural function of the part had sufficed to keep open the aperture.

Dr Moir had seen several cases operated on, but usually with an imperfect result.

IV. CANCER OF THE RECTUM, ETC.

Mr Priddle gave the following history of a case of cancer occurring in the pelvic organs of a young female:—*4th February* 1861. A. W., aged 16, applied to me on account of severe pain over the lower part of the abdomen, accompanied with excessive flatulence; the catamenia has never appeared; her bowels are so constipated that she does not think there has been any evacuation for above twelve months, without having recourse to active purgatives. The abdominal pain did not appear to be increased on pressure; an enema could only be administered when she was under the influence of chloroform, as the pain in the rectum was so intense. She has a pallid and very cachectic look; her appetite is generally good. About eighteen months ago, she came from the country in good health, to learn the business of a milliner, at which she was usually occupied, sitting about fourteen hours daily, while in the country she was a great deal in the open air and actively engaged. Her father died of tubercular disease of the lungs; her mother is a healthy robust woman. Her bowels became constipated shortly after her removal to town, apparently from being so constantly in the sitting position; and at the same time she began to suffer from the pain she now complains of.

28th June.—During the past five months till her death this day, her sufferings became more intense, and the only relief which she ever experienced was from full doses of morphia.

Dr Alexander R. Simpson had made the post-mortem dissection of this patient, who had become extremely emaciated, and died with the left leg flexed up on the abdomen, in which position it remained so firmly fixed, as only to be straightened with the greatest difficulty. The thoracic organs were all healthy; but, on opening the abdomen, which was enormously distended, a great quantity of a whitish turbid fluid escaped. The peritoneal surface of the abdominal wall was studded with hard cancerous nodules; and the mesentery was so indurated and contracted that the intestines were all gathered and matted together into a small mass which lay close on the vertebral column, while the liver and spleen were pushed far upwards underneath the ribs. The walls of the colon were very much thickened along all the descending portion, and became thicker as it approached the rectum, which was converted into a stiff firm tube, of very narrow calibre, and with walls of about three-fourths of an inch in thickness. The right ovary was converted into an irregularly-shaped scirrhous mass of the size of the fist. The uterus was small, but healthy.

V. RETAINED VAGINAL PESSARIES.

Dr Keiller showed several specimens of vaginal pessaries that had been retained for unusually prolonged periods, and gave histories of three cases in which it was necessary to remove the too long retained and organically impacted instruments by surgical means.

Dr Alexander R. Simpson said that whenever he introduced a gutta-percha pessary in a case of prolapsus uteri, he always gave the patient instructions to remove it every second or third night and re-introduce it the following morning; and where the patient had found difficulty in the removal of the ordinary shelf pessary, which was most frequently used here, he had sometimes passed a stout string through one side of it, which greatly facilitated its removal by the patient. But he had in his hand a pessary which an old woman had worn, contrary to his injunctions, for six or eight weeks without once having it removed. The result was that it had produced a ring of ulceration in the vaginal walls, in which its edges had become firmly embedded. He had, some years ago, removed an instrument of the same kind, which had been introduced by another practitioner, and which the patient had worn for upwards of five months without ever withdrawing it. The discharge in that case was so fetid, that when the patient entered the room, he thought she must be suffering from cauliflower excrescence. In these cases the cicatrization of the ulcer had had the effect of narrowing the vagina so far as to prevent further descent of the uterus. This accidental result had sometimes been attempted to be produced intentionally, by making patients wear instruments composed partly of copper and partly of zinc. By having the upper shelf made of zinc, or its margin surrounded with a ring of that metal, it had been supposed that a degree of galvanic action might be set up in the part, sufficient to lead at length to ulceration of that portion of the mucous membrane in contact with the zinc; but he believed that to produce the ulcerative action all that was necessary was to have a pessary of such large size as to have its rim exerting a constant steady pressure on the vaginal wall.

Mr Pridie mentioned the case of a patient who had worn a ring pessary for a year, from whom the instrument escaped at the end of that time, on her making a sudden movement. The prolapsus did not return.

SESSION XXI.—MEETING I.

November 13, 1861.—*Dr Keiller*, President, in the Chair.

I. DECAPITATION AND USE OF THE KEPHALOTRIBE IN CROSS-BIRTH.

Professor Simpson exhibited the mutilated body of an infant, of which he had delivered a patient in the Lying-in Hospital on Saturday the 9th instant. The patient was the mother of several children, and had had no very great difficulty

with her former labours. She had begun to suffer on this occasion from labour pains on Tuesday evening, but they were never very severe until the morning of Thursday when the waters broke. Even then they came on but slowly and slightly, and the case was being conducted as a tedious labour by one of the pupils outside until Saturday morning when his (Dr S.'s) colleague, Dr Alex. Wood, was called to see her. Dr Wood found the patient in a miserable hovel, and very much exhausted, with the child presenting transversely, and one arm outside the vagina. Believing that there would be more chance of a successful issue of the case if the patient were brought into the purer air and more careful nursing of the hospital, he (Dr Wood) had the poor woman conveyed to it immediately, and Dr Ziegler and himself (Prof. S.) were summoned also to see her. The case then presented the following aspect:—The right arm of the child protruded from the vagina, its body lay transversely across the pelvis, with the head high above the promontory towards the right ilium; a portion of the cord was prolapsed and pulseless, and the foetal heart had ceased to beat: the uterus was firmly contracted around the foetus, so as to render the introduction of the hand—even after the patient had been chloroformed—somewhat difficult, and turning of the child almost impossible. The promontory of the sacrum projected somewhat, and was more easily accessible to the finger than it ought to have been, but the diminution in size of the diameters was not very great. The child having been sometime dead, it was decided that the easiest way of delivering the mother would be to diminish the foetus by decapitation. Accordingly he (Prof. S.) tried to pass Ramsbotham's sharp hook round the neck, but found it impossible to apply the instrument, as there was not space for the hook to turn in the brim. He then made an effort to carry a cord round the neck by means of a catheter, with the view of applying the chain of the *écraseur*; as he had been informed by Dr Heyerdahl of Christiania, that he had in one or two cases cut through the body of the foetus in utero by means of a chain saw. Having been foiled in this attempt also he passed a blunt hook over the neck and divided it from below upwards, according to the plan of Dubois, by means of a strong pair of scissors, the body having been pulled down at the same time as much as possible into the pelvis by traction exerted on the projecting arm. During this traction the tissues gave way, and the arm was torn off along with the scapula; but the neck being still kept down by means of the hook, and its division effected, the body was easily removed. To extract the head he (Prof. S.) then introduced a hook into the mouth, but the lower jaw broke before the head could be pulled into the brim. Having provided a kephalotribe for such an emergency, he applied it—one blade on each side of the head, along the cheek and temples, and after compressing the blades to some extent by means of the screw, so as to catch firmly and compress the head and evacuate some of its contents, he easily succeeded in effecting its extraction. The instrument which he employed was the kephalotribe of Scanzoni of Würzburg, and was one of the simplest and most manageable forms of the instrument. The kephalotribe was much more in favour on the Continent than it was amongst British accoucheurs, and the identical one which he held in his hand had been used in ten or twelve cases by Professor Scanzoni. Perhaps he (Prof. S.) had been too much prejudiced against the use of this instrument; for the only other occasion on which, until quite recently, he had attempted to apply it, was in a case of head presentation with a narrow brim, where he tried to effect the reduction of the head and delivery of the child by means of one of the large cumbrous French kephalotribes, and failed in his object because of the repeated slipping of the blades. But only a few weeks had passed since he had been called to Dalkeith by Drs Lucas and Bryce, to assist them in the delivery of a patient, in whom the conjugate diameter of the pelvic brim measured about $2\frac{1}{2}$ inches; and in that case he (Prof. S.) had succeeded in diminishing the size of the foetal head, and effecting its delivery with considerable ease and complete safety, by means of the kephalotribe. He had had occasion to cut through the neck in three or four other cases of transverse presentation. Ordinarily, he had employed Ramsbotham's hook as the instru-

ment for decapitation, but in one case, where the neck was low down, he had divided it easily by means of scissors, and then the head was expelled by the uterine efforts, as he had seen it in other cases besides. The expediency of ever having recourse to decapitation had been questioned in some quarters; but in cases of transverse presentation, where the waters had long escaped and the uterus had become closely contracted around a dead fœtus, he (Prof. S.) believed that delivery could be accomplished with more safety to the patient, and more ease to the practitioner, by decapitating and diminishing the size of the fœtus, than by attempting the, in such cases, always difficult and sometimes hazardous operation of podalic version.

Dr Moir thought that when the head was left in that way in an inert uterus, or above a contracted brim, it might have been possible to have removed it with forceps had no other instrument been provided.

Dr Keiller remarked that in some cases it would be found quite impossible to extract a retained head by means of the forceps, and reminded the Society of a case in point which he had brought under their notice the previous Session. (See Report for February 27, 1861).

II. EXTRA-UTERINE PREGNANCY.

Dr Brandt, of Madeira, contributed the following notes of a curious case of extra-uterine conception:—Francisca Amelia Vieira was born in the island of Madeira in the year 1778. Was married to Alexander Vieira in 1795. Was confined of her first child (a son) on the 20th September 1796, who died in London on the 31st March 1802, aged five years, six months, and ten days. Five years after the first confinement she had a daughter named Maria, who was baptized at home, and died soon after. Three years after this she became in the family way, but was never confined of it. Four years after she was confined of a son named Ernesto, who is still living in Italy; still remaining in the family way of the third child. Seven years after the birth of Ernesto, she was confined of a daughter, who is also still living, called Amalia Augusta Vieira. She died on the 7th September 1858. On the 8th September 1858 at 8 o'clock A.M., the post-mortem examination was made on the body of Francisca Amelia Vieira, in the presence of Dr Juvenal Osorio de Ornelas, Surgeons Joao Nepomeceno Gomez and Francisco Simplicio Lomelino, Henry Crawford, the head nurse, several students and chemists, and the servants of the hospital. A bony tumour was extracted from the abdomen, on the right side of the uterus in the Fallopian tubes of that side; the uterus, and Fallopian tubes on the left side were perfect. The tumour weighed 4 pounds, was 8 inches in length, 5½ inches in diameter, and 16 inches in circumference. The tumour was divided longitudinally with a saw, as near the centre line as possible.

The two parts of the tumour which I saw in April 1861, were very much disfigured, being badly preserved in a dry state, and almost crumbling to pieces.

Francisca Amelia Vieira was born in 1778.

Married	in 1795,	.....	17	years old.
First child	„ 1796,	.....	18	..... Son.
Second Child	„ 1801,	.....	23	..... Daughter.
Pregnant	„ 1804,	.....	26	..... Not born.
Third Child	„ 1808,	.....	30	..... Son living.
Fourth Child	„ 1815,	.....	37	..... Daughter living.
Died	„ 1858,	.....	80.	

Was pregnant of the third conception fifty-four years.

The tumour or bony cyst contained a fœtus, which, from certain signs which will hereafter be mentioned, must have lived a long time after the natural term of birth. Its position in the bony case was, head uppermost, looking to the left and downwards, spine and back lying against the right side of the cavity, the nates occupied the inferior part of the cavity, the thighs and legs turned up, so that the feet were next the head; the whole body was twisted. It so happened that the saw cut through the head and body, dividing it through the

median line; but as the body was twisted, the section could not show two equal sides.

The head, in consequence of the pressure exercised on it by the cyst, was crushed in such a way that the parietal bones *passed over* the occipital and part of the left temporal bones, and *under* the posterior border of the frontal bone; from appearances the whole of the cranium was ossified.

The upper jaw of the larger half of the head has three teeth, one of which appears to be the second molar; the depressions of these teeth can be seen on the corresponding side of the other half of the head.

The two inferior extremities and the right arm and hand are placed between the right side of the head and the parietes of the cyst, in a very compressed state. The left arm and hand are situated on the opposite side of the head, between this and the corresponding side of the cyst, also in a compressed state.

Part of the umbilical cord can be traced round the neck, along the right side of the face and body, with the inferior members, to the navel. The instep of the left foot is placed against the chin and mouth, there forming a depression. From the different positions of parts above mentioned, it is clear that the whole body from the neck downwards is twisted from left to right, and the inferior members are turned upwards along the right side of the trunk.

The right knee lies on the mastoid process (right); the right foot lies in the following way:—External border on sutura sagittalis. Heel, on the molar bone, right side. Sole, part on the right side of the frontal, and part on the temporal bone (right). The left femur, which was cut longitudinally by the saw, presents a small medullar cavity; the compact tissue is extremely hard, and has the appearance of ivory (eburné). On the condyles of the tibia can be seen remains of the epiphysarian cartilage; the left omoplate, which was also sawed, is extremely hard. The liver is excessively large; part of the intestines are visible.

Professor Simpson thought the Society were much indebted to Dr Brandt for his interesting communication. There were but few cases on record where an extra-uterine foetus had been carried for such a lengthened period, and the only one he could then recall was that related by Cheston, where the patient survived the occurrence of the extra-uterine conception for fifty-four years. When the encysted foetus became hardened and altered, as in the case related by Dr Brandt, it had been designated Lithopædion by the older writers; and Smellie had made the awkward mistake of quoting a case of this kind, as a case of extra-uterine pregnancy by Dr Lithopædion. He (Prof. S.) had several preparations of extra-uterine pregnancies in his museum, which he hoped to be able to bring under the notice of the Society.

Dr Keiller reminded Professor Simpson that he had shown him a number of years ago a patient from whom he (Prof. S.) was trying to remove an extra-uterine body by making an opening in the abdominal wall with caustic potash.

Professor Simpson stated that he had been led to adopt the procedure referred to by Dr Keiller in consequence of the failure of an attempt which he (Prof. S.) had made in another case to remove an extra-uterine foetus through an incised opening in the abdominal wall. In that case air had been admitted to the foetus through the incision, in consequence of which decomposition had been set up in it, and it was discharged in fragments. In two other cases he had succeeded in removing portions of extra-uterine bodies by burning down upon them with potassa fusa through some part of the vaginal wall.

III. SPONTANEOUS EXPULSION IN CROSS-BIRTH.

Mr Alex. H. Howe, formerly of the H.E.I.C.S., contributed the following notes of a case of transverse presentation:—During my temporary connexion with Her Majesty's 39th Regiment of Foot, then stationed at Agra, North-Western provinces of India, Lieutenant F. drove up to my quarters about noon of a Saturday in the year 1841 (I forget the month and the day of the month), and stated to me that his wife had been in labour several hours, under the care of a sergeant's wife belonging to the regiment, of considerable experience in midwifery cases; and that she found some difficulty in the

management of the case. On examination, I found the arm presenting, and the hand protruding considerably beyond the external parts. I immediately wrote to Dr S., the surgeon of the regiment, to request his instant attendance, as it was my intention to turn the child, and that, of course, I was desirous of having the sanction of his presence, being then myself a very young man. Dr S. was with me in the course of a very few minutes, but said, that he could not allow me to perform the operation without additional medical advice. He then proceeded to seek the assistance of Dr Chalmers, artillery surgeon of the station of Agra. Dr Chalmers could not be found, and several hours were lost in fruitless attempts to find him; and about 7 P.M., Dr S. returned, bringing along with him the civil surgeon of Agra, whose name I forget. Immediately on their arrival, I began to endeavour to introduce my right hand within the cavity of the uterus, in the hope of grasping the foot, but the firm and rigid contraction of the organ completely baffled all my efforts at introducing it, and so cramped and pressed my fingers and hand as to render them comparatively powerless. It was my conviction that the child was dead from the very earliest period of my seeing the lady; but the civil surgeon of the station thought differently. It was also my conviction, that when I commenced my attempts to introduce my hand the liquor amnii had been completely evacuated. After about two hours fruitlessly spent in this way, the surgeons left me with the patient, who now seemed inclined to sleep, and it was considered more advisable that she should enjoy the benefit of a few hours of repose than be harassed with any further attempts at turning. The surgeons then left me, promising to return to me in the morning. The intervening time I spent in devising the various means that might be had recourse to in saving the mother's life. During all the time of the progress of the case, I cannot now recollect that there were any pains. On the arrival of the surgeons again next morning, about 7 A.M. on Sunday, I at once proposed the propriety of amputating the child's arm at the shoulder-joint, and the civil surgeon of the station being now convinced of the child's death, both the gentlemen gave their consent. The instrument I used, if I remember rightly, was the common surgical scissors of the pocket-case, protected from injuring the structures of the mother by their points being included in the hollow of my left hand. I experienced no difficulty in removing the arm, but no sooner was the operation completed, than the most powerful uterine contractions ensued, and the child was expelled in a state completely doubled upon itself, affording to the satisfaction of all of us present, an example of that rare and very interesting obstetrical phenomenon—spontaneous evolution.

I compared my case at the time with what Dr Denman says on the subject of spontaneous evolution, and the case quite agreed with his description.

I need hardly say that the child on its expulsion was quite dead.

Mrs F. made a most excellent and satisfactory recovery.

Dr Keiller stated that he had many years before been called to a case of transverse presentation, where the nurse in attendance had administered large doses of ergot of rye before his arrival. There was a large arm presenting, and he was about to proceed to perform the operation of podalic version when he heard a sudden sound which made him imagine for a moment that the uterus had become torn. The whole foetus had been suddenly forced through the pelvic passages and expelled. He thought at the time that it was a case of rapid spontaneous evolution, now he believed it to be rather a case of spontaneous expulsion.

Dr Bruce had lately had a case where he had been alarmed by a crackling noise during the expulsion of the foetus, which he had found it difficult to account for.

Professor Simpson suggested that the noise might be produced by the compression of the bones and joints. He had seen a case lately with Dr Alexander where the arm was presenting, and where he pressed the shoulder slightly upwards. They had to leave the patient's room for a short period, and on returning he (Prof. S.) found that the process of spontaneous evolution had

begun. Dr Brown of Preston, who was not in the habit of turning in cases of transverse presentation, but preferred to leave the case to nature, had witnessed nine cases of spontaneous evolution.

IV. INDUCTION OF PREMATURE LABOUR.

Dr Moir related the history of a case where he induced premature labour by simply separating the membranes from the wall of the uterus all around the os by means of the fore-finger. The patient had lost two children previously, near the full term, and he had succeeded in saving this, her third, by inducing labour in the old fashion about the end of the eighth month.

Professor Simpson stated that he had recently delivered two ladies on the same day, in both of whom he had induced premature labour in consequence of their being the subjects of albuminuria. One of the patients had lost several children at an advanced stage of utero-gestation, in consequence of hæmorrhagic infiltrations into the placenta occurring in connexion with albuminuria; the other was pregnant for the first time, and her child was withered and atrophied, the placenta being studded all over with extravasations in various stages of transformation.

GRADUATION IN MEDICINE AT THE UNIVERSITY OF EDINBURGH.

On the first of August, the annual ceremony of Graduation in Medicine took place in the General Assembly Hall, Edinburgh, under the presidency of Sir David Brewster, Principal of the University. The following is the list of Graduates, with the titles of their theses:—

*** *Those who have obtained Prizes for their Dissertations.*

** *Those deemed worthy of Competing for the Dissertation Prizes.*

* *Those commended for their Dissertations.*

THE DEGREE OF M.D.

- * Alexander, Robert, Ireland. On Jaundice.
- Arnott, John Lovell, England. On Erysipelas.
- *** Black, James Watt, M.A. Aberd., Scotland. On the Circulation through the Brain.
- Blackwell, Richard Fortune, New South Wales. On Preventive Measures to be taken against Epidemic Disease.
- * Boulton, Percy, England. On Delirium Tremens.
- * Brisbane, Thomas, Scotland. Clinical Records of the Dumfries and Galloway Royal Infirmary.
- * Brittain, Thomas Lewis, England. On Exophthalmic Goitre.
- Brody, William Turnbull, England. On Uterine Hæmorrhage.
- ** Browne, James Crichton, Scotland. On Hallucinations.
- 10 Cairns, Thomas, Scotland. The Prevention of Disease the Prime Duty of the Physician.
- * Campbell, William Watson, Scotland. Critical Observations on the Science and Practice of Medicine.
- Carson, Alexander Tertius, Ireland. On Inflammation of the Breast during Lactation.
- Cheesbrough, Henry Armstrong, West Indies. On Hooping-Cough and some of its frequent Complications.
- Christison, James, Scotland. On the Diagnosis and Treatment of Ovarian Dropsy.
- * Clapham, Edward, England. On Infantile Mortality.
- Clarke, Alexander Carson, Ireland. On Diabetes Mellitus.
- * Conyngham, Valentine O'Connor, Monte Video. On Affections of the Lachrymal Apparatus.
- Corlett, Joseph Benson, Bahamas. On Phrenology.
- Cunynghame, Robert James Blair, Scotland. On Fœticide.

- 20**Davy, Richard, England. Clinical Reports upon certain Forms of Cerebral Disease.
 Deane, Charles Maslen, England. On Cannabis.
 De Smidt, John, Cape of Good Hope. On Syphilis.¹
 Dewar, Alexander, Scotland. On Tubercular Meningitis.
 Dewar, James, Scotland. On the Physiology of the Sympathetic System of Nerves.
- * Dick, Forbes, Scotland. A Consideration of the Leading Tenets of Hahnemann and his Followers.
 Dickson, James, Scotland. On Rheumatism.
 * Dixon, William Henry, England. On the Association of Morbid States.
 * Duncan, John, M.A. Edin., Scotland. On Paraplegia.
 Foote, Harry, England. On the Value of the Microscope as an Aid to Diagnosis.
- 30 Forte, Augustus Carmichael, Demerara. On the Relative Merit of Lithotomy and Lithotripsy.
- *** Fraser, Thomas Richard, Calcutta. On the Characters and Properties of *Physostigma venenosum*.
- * Fyfe, George, Scotland. On Tracheotomy in Croup.
- *** Gamgee, Arthur, Florence. Contributions to the Physiology and Chemistry of Fœtal Nutrition.
 Gentle, James, Scotland. On the Treatment of Stricture of the Urethra by Incision.
 Gentle, Peter, Scotland. On Hydrophobia.
 Girdwood, James M'Ewan, Scotland. On the Correlation of Climate and Food.
 Gordon, William, Scotland. On Therapeutics, Past and Present.
 Grant, James, Scotland. On Presumptions of Survivorship.
 Hains, Frederick Augustus Palmer, England. On Bronchotomy.
- 40 Hardie, James, Scotland. On the Reflex Theory of Nervous Action.
 Hill, James Henry George, Bengal. On Anæsthesia in Midwifery.
 Hope, James Sommerville, Tasmania. On Cancer of the Pylorus.
 Hope, John, Scotland. On the Causes of Error in Medical Science.
 Houston, Patrick Cruikshank, M.A. Aberd., Scotland. On Inflammation as it affects some of the principal Tissues, and the Causes of its Occurrence.
- * Hughes, Thomas Henry, North Wales. On Croup.
 Jolly, Robert, Ireland. On Inguinal Hernia.
 Jones, William, England. On Nature in the Prevention and Cure of Disease.
 Kennedy, David Makin, England. On the Chemistry of Respiration, and its Effects upon the Atmosphere.
- * Ketchen, William, Scotland. The Pathology of Endocarditis and Valvular Disease of the Heart.
- 50 Labonté, Jules, Mauritius. On the Modes of Communication of Cholera; with Sanitary Remarks.
- * Land, Robert Turner, England. On the Acute and Chronic Forms of Gout.
 * Lightbody, John, Scotland. On Diathesis, in Relation to Disease and Treatment.
 Lord, Richard, England. On Synovial Membranes, with especial reference to Bursæ Mucosæ.
 Macdougall, John, Scotland. On Gunshot Wounds, considered with relation to Forensic Medicine.
- ** Macfarlan, Alexander Johnstone, Scotland. On Photography and the Stereoscope in their Scientific and Practical Relations to the Subjects of the Medical Curriculum.
 M'Iver, James Robertson, Scotland. On Stricture.

¹ Dr De Smidt graduated on 7th May 1862.

- Macleod, Donald, Canada. Notes of Surgical Cases from the Clinical Wards of the Royal Infirmary.
- M'Lean, John Mackenzie, B.A. Edin., Scotland. On the Communication of Disease.
- Macleod, Roderick, Scotland. On Climatology.
- 60* Macnair, Robert, M.A. Glasgow, Scotland. A Review of the late Dr Rigby's Essay on the Uterine Hæmorrhage which precedes the Delivery of the full-grown Fœtus, illustrated with Cases.
- Malcolm, John Vicary Thatcher, Scotland. On a Few Cases of Sarcina Ventriculi.
- Mallett, Frederick Blakesley, England. On Phlebitis and Pyæmia.
- Maxwell, Peter, Scotland. On the Maintenance of the Healthy Balance of Nutrition in the Body.
- * Milligan, John Laidlaw, Scotland. On Reflex Action.
- Morse, Clinton James, Nova Scotia. On Variola.
- Muir, Peter, Scotland. Notes of Observations on Thirteen Cases of Rheumatic Fever.
- * Muirhead, Claud, Scotland. On Meteorology in Relation to Disease.
- Muirhead, William Muir, Scotland. On Chorea in its Relation to Rheumatism.
- Murray, David, Scotland. On Epilepsy.
- 70 Nash, William, England. On Organic Stricture of the Urethra.
- Neilson, James, Scotland. On Vesical Calculi.
- Nicholson, John, England. On Anæsthetics.
- Niven, John Duncan, Jamaica. On the Treatment of Certain Forms of Paraplegia by *Secale cornutum*.
- Ratray, Andrew McLennan, Scotland. On Respiration.
- Reid, Arthur Grant, Scotland. On Air.
- * Reid, Duncan, Cape of Good Hope. On Decapitation and Decapitating Instruments.
- Reid, James Gerhard, Cape of Good Hope. On Laborious Labour.
- Renton, David, Scotland. On Diet.
- Robertson, Adam, Scotland. On Epidemic Catarrhal Fever.
- 80 Robertson, James Davison, Orkney. On the Function of Respiration and its Relation to Life.
- * Ross, David, Scotland. Observations on Animal Heat.
- * Ross, William George, England. On the Diagnosis of Thoracic Diseases by Inspection of the Body.
- Russell, Charles Martin, East Indies. On the Theories and Treatment of Epilepsy.
- Russell, William, Scotland. On Electrical Fishes.
- * Sealy, John, Barbadoes. On the Action of Alcohol in Health and Disease.
- Sharood, Edward Julian, England. On Delirium Tremens.
- Shepherd, John, Scotland. On the Parasites of the Human Skin.
- Skae, Francis, Scotland. On the Physiology of the Spinal Cord.
- * Smart, Andrew, Scotland. On Animal Electricity and Nervous Force.
- 90 Smith, John, Scotland. On Influenza or Catarrhal Fever.
- * Smith, John Gordon, Scotland. On the Relation between Chemical Affinity and Heat.
- Smith, Peleg Wiswall, New Brunswick. On Scarlatina.
- * Somerville, Walter, Scotland. On Moveable Bodies in Joints.¹
- Stephen, Andrew, Scotland. On the Duality of the Nervous System.
- Thomas, Lynch, Barbadoes. On some of the Abnormal Conditions of the Periosteum.
- * Thorold, Ellis Frederick, England. On Asthma.
- Thursfield, William Nealer, England. On Ulcer in the Stomach.
- Todd, John, Ireland. On Variola.
- *** Traquair, Ramsay Heatley, Scotland. On the Asymmetry of the Pleuronectidæ.

¹ Dr Somerville graduated on 5th July 1862.

- 100*Turner, John, North Wales. On Pneumonia, with particular reference to Treatment.
 Veale, Richard Sobey, England. On the Nature and Treatment of Acute Gout.
 * Wallace, John, M.A. Aberd., Scotland. Observations on Clinical Medical Cases.
 Wemyss, John Watson, Scotland. On Malaria as the Cause of Inter-mittent and Remittent Fevers.
 Whyte, George, Canada. On Diphtheria.
 Williams, John, South Wales. Observations on the Treatment of Bronchocele.
 Wright, George Edward, England. On Gastric Digestion, and the Circumstances affecting it.
 * Wright, George Vint, Scotland. A Retrospect of some Doctrines in Obstetrics.
 Wright, William Smith, England. On Ovarian Dropsy.

THE DEGREES OF M.B. AND C.M.

- 109 Groves, Charles Henry, B.A., T.C.D., England. On the Disorders attending Dentition.

QUARTERLY RETURN OF BIRTHS, DEATHS, AND MARRIAGES.

THE present Report gives the number of births, deaths, and marriages registered during the quarter ending 30th June 1862, in the 1007 districts into which Scotland is at present divided for the purpose of registration. From the Returns, it appears that the births and deaths are above the average of the corresponding quarter of previous years, while the marriages are below the average.

BIRTHS.

28,749 births were registered in Scotland during the second quarter of 1862. This gives the annual proportion for the quarter of 373 births in every ten thousand of the estimated population, or one birth to every 26 persons. This is above the average of the corresponding quarter of the seven previous years, which only gives the proportion of 368 births to every ten thousand persons. Even that proportion, however, is above the average birth-rate in England, as a ten years' average of the second quarter shows it to be only at the rate of 357 births in every ten thousand persons in England. Of the children born, 14,850 were boys, and 13,899 girls, which gives the proportion of 106·8 boys for every 100 girls at birth, a slightly higher proportion of boys than usual.

The proportion of births in the town and country districts varied considerably. Thus in 126 town districts (embracing almost all the towns with a population of 2000 and upwards), 16,507 births were registered; while in the 881 country districts (embracing the remainder of the population of Scotland), the births amounted to 12,242; thus indicating an annual proportion of 407 births to every ten thousand persons living in the town districts, but only 335 births to a like population in the country districts.

Of the 28,749 births, 26,213 were legitimate, and 2536 illegitimate, being in the proportion of one illegitimate in every 11·3 births, or 8·8 per cent. of the births illegitimate. The percentage of illegitimate births in the several divisions and counties of Scotland, closely agrees with former returns, and shows that illegitimacy prevails to a much greater extent in the counties embraced in the North Eastern and Southern Divisions of Scotland than in the other counties.

DEATHS.

17,376 deaths were registered in Scotland during the second quarter of 1862, being in the annual proportion of 225 deaths in every ten thousand of the estimated population, or one death in every 44 persons. This is considerably above the mean mortality of the corresponding quarter of the seven previous years, which only averaged 210 deaths in every ten thousand persons.

As usual, the deaths in the town districts greatly exceeded those in the

country districts. Thus, in the 126 town districts, 10,607 deaths were registered, but in the 881 country districts only 6769 deaths. This indicates an annual proportion of 261 deaths in every ten thousand persons living in the town districts; but only 187 deaths among a like population living in the country districts.

Of the deaths, 6223 were registered in April, 5837 in May, and 5316 in June; thus indicating 207 deaths daily in Scotland during April, 188 daily during May, and 177 daily during June.

INCREASE OF POPULATION.

As the births amounted to 28,749, and the deaths to 17,376, the natural increase of the population amounted to 11,373 persons. From this, however, have to be deducted the numbers who emigrated during the quarter. From a Return furnished to the Registrar-General by the Emigration Commissioners, it appears that, during the quarter ending 30th June 1862, 47,112 emigrants left the ports of Great Britain and Ireland, of whom 4591 were ascertained to have been of Scottish origin. If to that number 691 be added as the proportion of emigrants whose nationality was not distinguished, the total number of Scottish emigrants during the quarter would amount to 5282, which, deducted from the excess of births over deaths, would leave 6091 as the increase of the population during the quarter.

MARRIAGES.

5172 marriages were registered in Scotland during the second quarter of 1862, being in the annual proportion of 67 marriages in every ten thousand of the estimated population, or one marriage in every 148 persons. This is below the average marriage-rate of the corresponding quarter in the seven previous years, which averaged 68 marriages in every ten thousand persons. Both these proportions, however, are very far below the mean English rate for the same quarter, a ten years' average giving a proportion of 85 marriages in every ten thousand inhabitants,—a striking difference between countries so closely allied.

Of the above marriages, 3086 were registered in the 126 town districts, and 2086 in the country districts—giving the proportion of 76 marriages in every ten thousand persons in the town districts, but only 57 marriages in a like population in the country districts. These marriage statistics indicate very clearly the depression in trade generally, mainly owing to the war now being carried on between the two portions of the once United States of America.

Of the 5172 marriages, 1133 were registered in April, 1050 in May, and 2989 in June.

HEALTH OF THE POPULATION.

The health of the population has not been so satisfactory as could have been desired, the cold rainy weather, with the excess of moisture and want of sunshine, having apparently acted prejudicially on the health of the inhabitants of Scotland during the quarter, and produced both a greater amount of sickness and of deaths than in the corresponding quarter of former years. In so far as appears from the Registrar's notes, this high mortality does not appear to have been caused by the prevalence of any particular disease, but rather by the mortality of all the usual diseases having been rendered higher by unfavourable atmospheric agencies. Hooping-cough and measles, with more or less bronchitic complication, have been general over the country. Sore throats, ulcerated sore throats, and diphtheria, have been remarked in scattered localities; and in Mid and South Yell the sore throats appear to have been accompanied by an affection of the hands, which raises the suspicion, that sore throat and diphtheria in the human subject is but a variety of that epidemic disease in cattle known by the name of murrain, or epizootic apthæ, characterized in them by the apthous and ulcerated mouth and sore hoofs. A few cases have been brought under our notice by an intelligent veterinary surgeon, in which it was clearly established that the milk of cows affected with murrain caused apthous mouths and diphtheria in children, and fatal apthæ, terminating in ulcerous affections of the mouth, throat, and windpipe in the case of pigs.

WEATHER.

Though the mean temperature of the quarter was very nearly the average of the corresponding quarter in former years, the great want of sunshine, excessive rain-fall, the clouded sky, and the consequent much greater humidity of the air, seem to have had injurious effects on the inhabitants of Scotland, and to have largely increased the number of deaths. The mean temperature over Scotland was 49.4° for the quarter, and the average depth of rain 10.77 inches.

The mean barometric pressure, corrected and reduced to the sea-level, was 29.881 inches in April, 29.810 inches in May, and 29.733 inches in June. The mean temperature of April was 44.6° , that of May 51.1° , and that of June 52.4° . The mean dew-point temperature was 39.1° in April, 46.0° in May, and 47.3° in June. The degree of humidity was 83 in April, 84 in May, and 83 in June. The lowest night-temperature of the exposed thermometer with a blackened bulb was 11.9° in April, 18.3° in May, and 24.0° in June. Rain fell 14 days in April, 16 days in May, and 20 days in June, with a mean depth of 2.99 inches in April, 3.89 inches in May, and 3.99 inches in June. The sun shone, on an average, 183 hours during April, 182 hours during May, and only 174 hours during June. Winds with an easterly point blew 7 days in April, 9 days in May, and 5 days in June. Winds with a westerly point blew 15 days in April, 14 days in May, and 18 days in June.

THE MACLEAN WILL CASE.

THE second verdict in the Maclean will case appears almost to absolve us from the necessity of repeating or reinforcing our remarks upon the subject last year.¹ On the whole thirteen issues relating to the will and the two codicils, a unanimous jury has reversed the finding of the unanimous jury of the former trial, which had been pronounced in the interval by the judges "contrary to evidence." It can hardly be but that this glaring instance of contrariety should provoke unfavourable remarks upon the system of jury trials in civil causes; but with this we have nothing to do. Setting aside the purely technical elements of the verdict, relating to the signature of the witnesses, on which the evidence was really extremely perplexing, and on which the jury seem to have felt a good deal of difficulty, there can be no longer any doubt that the case of the pursuer was completely destroyed by the defender's evidence, which was more full and clear on several points than at the former trial. The gossiping hearsay evidence as to the sunstroke in 1841, on which so much stress was laid as the starting-point of the major's supposed insanity, was entirely disposed of by the most clear and convincing testimony of numerous witnesses who knew the testator in Sierra Leone, to the effect that he never had, or could have had, a sunstroke during his residence there. The evidence of his incoherency and irrepressible obscenity towards women and children, of his personal delusions as regarded his birth and education, of his presumed irrational dislike to his relatives, and his presumed belief that he had no relatives, were all met by multiplied proofs of the fact that the major was really a rather clearheaded and clever old gentleman, fond of children indeed, and habitually coarse towards women of a certain order, but perfectly capable, when he so pleased, of keeping his conduct within the bounds of decency and propriety. The whole of the pursuers' evidence was thus shown to be tainted either with wilful prevarication or with the gross exaggeration of small peculiarities. The braggart talk of the old major about the eagle's nest, and his sly joke about being descended from the great Tamerlane, "whose real name was Tam Maclean," assumed their true aspect when shown to be the loose talk of an old gentleman who had all his life been in the habit of "taking rises out of people, particularly young doctors." There is little doubt, in fact, that the major quizzed the whole countryside so inveterately, that his sayings and doings to baffle their impertinent curiosity about himself became twisted into evidence of insanity under the influence of prejudices, which infected even the medical witnesses, when placed in the box to declare opinions founded on this one-sided testimony, without

¹ Edinburgh Medical Journal for September 1861, p. 298. See also articles in November 1861, and March 1862.

the advantage of hearing the opposite evidence. As we pointed out on the occasion of the former trial, the medical evidence for the pursuers was given upon a case which was studiously presented *ex parte*; and this applies equally to the present trial, where they were excluded by forms of law from hearing the defender's evidence. But to make out Major Maclean insane, Dr Bucknill was obliged to *assume* the sunstroke, the incoherency, the uncontrollable indecency, the habitual filthiness of person, the suspicions of poisoning, the serious belief in the "delusions" about his relatives and Tamerlane, and the coffee-stick! A case so supported upon a baseless foundation could not but fail whenever the foundation was shown to be baseless; the jury saw clearly enough, when the evidence of the other side was led, that the eccentric major had not only been pretty successful in taking "rises" out of the young doctors of his regiment, but had got even an experienced fish from Devonshire to rise to a dexterous cast from the other side of the Stygian stream. The correspondence was not seriously attacked; and the "softening of the brain," with all its formidable consequences, disappeared on this occasion into the limbo of all the vanities. The case was therefore shorn of almost all its medical interest, and nothing remains for us but to announce the triumph of common sense, and to refer to our former detailed account of the facts, of which not a single sentence appears to us to demand any further remark.

ON THE ACTION AND USES OF CODEIA.

THE following is the copy of a letter from Dr Aran (Professor Agregé at the Faculty of Medicine, Physician-in-Chief to the Hospital St Antoine of Paris) to M. Berthé:—

"MY DEAR M. BERTHÉ,—I beg you will excuse me for having so long delayed answering you, but ever increasing occupations take up the whole of my time, and do not always leave me the leisure of doing what I should wish.

"I send you at last the information you ask on the experiments I have lately made with the codeia. I have as yet employed this alkaloid only to obtain calm and sleep, but from the ten or twelve cases I have witnessed I have been able to discover in this agent sedative and narcotic properties, which to my estimation place it in the first rank amongst the best remedies of this kind existing. To recapitulate in a few words the impression this medicament has made upon me, I will tell you that the codeia seems to me to contain the most marvellous and efficacious properties of opium. Inferior to morphia for calming pains, for this reason only, that it must be given in larger doses to patients; it has, however, over morphia, a marked superiority in that respect, that it never occasions a heavy and agitated sleep; that it does not bring on perspiration or eruptions of the skin, nor trouble the digestion; that it produces no obstinate constipation, no desire to vomit nor any vomiting. For all these considerations codeia appears to me to be destined to become of great service in the nervous diseases of the stomach, and I can tell you that we have obtained with it some calm in cases of gastrodynia, which had defied all other means, belladonna included.

"But it is especially as a means of procuring calm and restoring sleep that the codeia seems to me called to occupy an important place in therapeutics. Those stubborn and harassing coughs of bronchitis, and particularly of consumption, those violent pains of rheumatism, gout, and the organic affections, of cancer, for instance, which disturb the sleep, and frequently deprive the patients of the least moments of repose, are all forgotten in the midst of the calm and agreeable sleep which codeia procures.

"I have witnessed two very conclusive cases of incurable cancerous tumours, for which no means of relief, at all lasting, had been found. One of these tumours, of an enormous size, almost filled the pelvis, and produced on the passage of the sciatic nerve pains returning at about 8 o'clock P.M., and with such an intensity as to force cries from the patient, who could only become calm but towards the morning, when she would fall asleep, overcome with fatigue. Two centigrammes¹ of codeia produced the first day a calm so com-

¹ One centigramme is equal to $\frac{1}{100}$ grain.

plete that the patient thought herself cured, and for the first time since a month she was able to take a somewhat copious meal, her appetite having returned for the first time. During the twelve days I attended this person, the pains were almost nul, and as soon as they reappeared the invalid mastered them with a few centigrammes of codeia; it became, however, necessary to increase the dose by degrees, and from two centigrammes the patient increased the dose to ten and twelve centigrammes.

"To explain how so small a dose produced a calm so complete, I must observe that her weak state rendered her very sensitive to the action of codeia, which, on the other hand, appears to me quite able to be given from the first in a much larger dose than morphia. For example, we have seen the dose of five centigrammes of it in the syrop calming the pains of gastrodynia without leaving the slightest trace of narcotism; and one of our patients takes at present every day fifteen centigrammes of codeia without any bad effect. This invalid, who has long made use of opium and morphia, establishes between those agents and codeia a difference quite to the advantage of the latter, which does not agitate her at all.

"This, for the present, is all I can tell you, my dear M. Berthé. I am convinced that physicians would more frequently prescribe codeia, if the price of this medicament was not so high; you would consequently have rendered a signal service to medical practice if your researches would permit you to lower considerably the price of codeia.

"Receive in the meantime my thanks for your generosity in allowing me to draw from your laboratory that which has so much benefited my poor patients. —I am, my dear Sir," etc.

MEDICAL NOTES FROM THE GRIQUAS.

THE Rev. W. Buxton Philip, a missionary in South Africa, who had received a partial medical education, writes as follows to a friend in this city:—

"You ask for symptoms, pathology, etc., of our white sore throat. Of the post-mortem appearance I can say nothing, as you would be thought fit for the madhouse or the gallows for trying to dissect a dead body; permission is never given.

"The first symptoms are those of a very severe cold, frequent shiverings, fever, inflammatory pulse, sense of uneasiness in the throat. On inspection, the fauces are seen to be very much inflamed; sometimes these symptoms increase for two or three days; occasionally the disease is more rapid; small specks of ulceration are seen about the tonsils, uvula, and back of the œsophagus. The next day these are much larger, coalescing in some places. The next day it is one mass of ulceration, and of a deeper yellow in colour; there is a great deal of fever, not very much cough, if any, great difficulty in deglutition. The following day the ulceration will assume a bluish tint, all the signs of being putrid, the odour from breath and mouth intolerable, great languor, feeble pulse, and, generally within twenty-four hours, death, not apparently having any symptom of suffocation.

"Occasionally, what I have described as running its course in five or six days, will take only two or three. I have heard of children playing at midday one day, and dead twenty-four hours after, while some keep their beds for several days. The first case I saw was a young girl, for whom I had been asked to give a gargle for sore throat. I gave one of alum and sulphuric acid. The next day I called to see the patient, found her sitting up and walking about. Looked at her throat and found the ulceration putrid. Tried at once nitrate of silver, *the remedy* if taken in time, but next morning she was dead. It would seem to be an epidemic, and is certainly infectious,—sometimes three or four children being carried off in the same family within a few days. *Treatment.*—At first alum and diluted sulphuric acid gargle, or muriatic acid gargle, and febrifuges, with purgatives. Later, nitrate of silver in strong solution, or applied in stick, and stimulants, wine, ammonia, brandy, etc. Strong counter-irritation to throat—mustard. There is also a combination of this, though not quite so severe, with cynanche tonsillaris; whilst the tonsils are greatly swollen or forming abscesses, their external surfaces are covered with ulceration, extending also

to the œsophagus. *Treatment*—the same as for the last, varying according to the severity of the attack.

"I have had one case in which I could do nothing with the forceps, the head was so impacted. I told the friends there was nothing left for it but craniotomy, but they had better send for a medical man. They did so. When he arrived twenty-four hours after I had been there, he also tried the forceps, but could get no hold; he told me to tell the friends that there was nothing left for it now but craniotomy, especially as the child must be dead, the head having been impacted and immovable now three days. Craniotomy was performed, and all was afterwards easy; the woman had a very long and precarious recovery. This was the first case of craniotomy I had attended, and should have been compelled to accomplish it myself had this doctor not been within 40 miles distance. Of course, I proposed another doctor, that they might not think I proposed an operation entirely new to them without sufficient grounds. This was the first time I had anything to do with a woman whose development of nates was so immense as some of these Griqua women; it was *quite bewildering*, and this in a woman of about 30. I wish you could see a good instance of this development. I am sure the circumference of the body in that part must be from five to six or even seven feet, perhaps more, but there is no chance of getting a measurement. You find it in persons not so remarkably stout, except perhaps in the legs; no necessity for a bustle; with each step taken you see a most decided (not quiver, but) agitation—a good shake. Walking is therefore very tiring, and they stand to rest almost every 50 or 100 yards. Of course, they more generally sit or squat on the ground. Many an unfortunate chair has succumbed under their weight. I wish it were possible to get a pelvis of one of these women, but that would be sacrilege."

FORFARSHIRE MEDICAL ASSOCIATION.

THE Fourth Annual Meeting of this Association was held within the Commercial Hotel, Brechin, on Wednesday the 23d of July,—Dr Guthrie, sen., president, in the chair. There were thirty medical gentlemen present from the different towns and villages in the county, the greater number being from Dundee, Montrose, and Brechin. The meeting was also favoured with the presence of Dr Seller, formerly President of the Royal College of Physicians, and Dr Gairdner, Lecturer on Medicine, and one of the Physicians to the Edinburgh Royal Infirmary. After the usual routine business, a long and interesting paper was read by Dr Guthrie, sen., on "Ulcerative Diseases of the Throat," being an account—drawn up, at the time, from personal observation—of an epidemic which occurred in Brechin and its neighbourhood, chiefly during the years 1819–20. This paper raised an important question as to what relation the disease so minutely described held to the so-called diphtheria of the present day; and various members of the Association, as well as Dr Gairdner and Dr Seller, expressed their opinions regarding it. All were agreed that the communication which had been read was very valuable, viewed in the light of an interesting historical document, clearly and ably drawn up; and a unanimous vote of thanks was tendered to Dr Guthrie for submitting it, conjoined with a request that he would consent to its publication in the *Edinburgh Medical Journal*. To this request the doctor kindly agreed. It was then resolved to hold the next annual meeting at Forfar, in July 1863; and the office-bearers for the year were elected, viz., Dr Steele, Forfar, president; Dr Smith, Forfar, and Dr Christie, Dundee, vice-presidents; Dr Millar, Dundee, secretary; and Dr Cowper, Dundee, treasurer.

PRESENTATION TO DR ALEXANDER GUTHRIE OF BRECHIN.

ON the 1st of August, a numerously-attended meeting of the inhabitants of Brechin and neighbourhood assembled to do honour to Dr Guthrie, who has lately completed fifty years of professional life in that town. The Earl of Dalhousie occupied the chair, and in the name of the meeting presented to Mrs Guthrie the portrait of Dr Guthrie by Colvin Smith, and to Dr Guthrie a handsome service of plate and a clock.

DEATH OF PROFESSOR TRAILL.

WE regret to have to record the death of Dr Thomas Stewart Traill, Professor of Medical Jurisprudence in the University of Edinburgh, which took place on the 30th of July last. Dr Traill graduated in Edinburgh in 1802, and shortly afterwards settled in Liverpool, where he obtained a large practice, and was highly respected both on account of his scientific attainments, and for the zeal with which he entered into every benevolent and philanthropic scheme. In 1832, Dr Traill came to Edinburgh to fill the chair of Medical Jurisprudence, rendered vacant by the appointment of Dr Christison to the professorship of *Materia Medica*, and continued to fulfil the duties of his office till within a week of his death. Few men in the medical or in any other profession possessed a greater amount of general knowledge than Professor Traill. In illustration of this, we may mention that he delivered a six months' course of lectures on Chemistry in the interval between the death of Dr Hope and the appointment of Dr Gregory; and that on the death of Professor Edward Forbes he filled for several months the chair of Natural History. That a man, in addition to performing other and important duties, should have kept himself on a level with sciences advancing with such rapidity as chemistry and natural history, is a proof of no ordinary mental vigour. Professor Traill's last literary undertaking was the editing of the eighth edition of the *Encyclopædia Britannica*,—a task for which his vast stores of information eminently qualified him.

CHAIR OF MEDICAL JURISPRUDENCE.

DR DOUGLAS MACLAGAN has been appointed Professor of Medical Jurisprudence and Medical Police in the University of Edinburgh.

PUBLICATIONS RECEIVED.

- Aitken,—The Growth of the Recruit and Young Soldier. By Professor William Aitken, M.D. London, 1862.
 Althaus,—The Spas of Europe. By Julius Althaus, M.D., etc. London, 1862.
 Dundee Royal Asylum for Lunatics, Forty-Second Annual Report of. 1862.
 Fumouze,—Historical Researches on Exutories. By Fumouze. Paris, 1862.
 Gairdner,—Clinical Medicine: Observations recorded at the Bedside, with Commentaries. By W. T. Gairdner. Edinburgh, 1862.
 Hints for Clinical Clerks in Medical Cases. London, 1862.
 Holmes,—A System of Surgery. Vol. III. Edited by T. Holmes, M.A. Cantab. London, 1862.
 Murphy,—Lectures on the Principles and Practice of Midwifery. By Edward William Murphy, M.D., etc. Second Edition. London, 1862.
 New Sydenham Society's Year-book for 1861.
 O'Reilly,—Is Tracheotomy in Croup a Justifiable Operation? By John O'Reilly, M.D. New York, 1862.
 Pecholier,—Illusions et Realités de la Thérapeutique. By Professor G. Pecholier. Paris, 1862.
 Pratt,—On Eccentric and Centric Force: A New Theory of Projection. By Henry F. A. Pratt, M.D. London, 1862.
 Strange,—Chart of the Principal Constituents of the Urine in Health and Disease. By William Strange, M.D., etc., Worcester. London, 1862.

PERIODICALS RECEIVED.

- American Journal of the Medical Sciences, —No. 87, July. Philadelphia, 1862.
 Births, Deaths, and Marriages, Monthly and Quarterly Returns of, July 1862.
 Boston Medical and Surgical Journal, —July 10, 17, 24, 31, 1862.
 British Medical Journal, —July 26, Aug. 2, 9, 16, 23. London, 1862.
 Bulletin Général de Thérapieutique, —July 1, 15, 30. Paris, 1862.
 Dublin Medical Press, —July 30, Aug. 6, 13, 20, 1862.
 Dublin Quarterly Journal of Medical Science, No. 67, Aug. 1862.
 Gazette des Hôpitaux, July 22, 24, 26, 29, 31, Aug. 2, 5, 7, 9, 12, 19, 21. Paris, 1862.
 Gazette Hebdomadaire de Médecine, —July 25, Aug. 1, 8, 15, 22. Paris, 1862.
 Gazette Médicale de Paris, —July 12, 26, Aug. 2, 9, 16, 1862.
 Health, etc., of Manchester, —July 1862.
 Journal de Médecine et de Chirurgie, —Aug. Paris, 1862.
 Medical Times and Gazette, —July 26, Aug. 2, 9, 16, 23. London, 1862.
 Revue de Thérapeutique Medico-Chirurgicale, —Aug. 1, 15. Paris, 1862.
 Wochenblatt der Zeitschrift der Aerzte in Wien, —Nos. 21 to 29, for 1862.

Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*On Ulcerative Disease of the Throat.* By
ALEXANDER GUTHRIE, L.R.C.S.E., Brechin.

It is my object in the following remarks to give an account of a peculiar form of ulceration of the throat, with which I became acquainted upwards of forty years ago, and which I have had many opportunities of observing since. The disease has been prevalent occasionally ever since I began to practise, and from all the information I can collect, it was known at a period long anterior to that time. I shall first give a general account of the disease, and shall then append a few cases which came under my care during the years 1820, 1821.

The disease may be defined as a particular species of inflammation (generally ushered in by fever), attacking the mucous membrane of the back of the mouth and throat, and having a great tendency to terminate in gangrene.

1. *Symptoms and History.*—The affection comes on, sometimes in a mild form, at other times it is severe from the beginning, or it may assume all the different gradations between these two modes of attack.

In the mild form of attack the fever is slight and of short continuance, there is a degree of lassitude and depression of strength, and the patient complains only of some stiffness and soreness of the throat and loss of appetite. In such a case, if the throat is early inspected, there is seen either a spot of copper-coloured inflammation, circumscribed by more florid inflammation, on one or both tonsils, or a small slough of the size of a split pea or bean; the next day the place where the copper coloured inflammation was situated is occupied by an ash-coloured slough or sloughs.

If the patient is kept from exposure to cold, and the bowels continue regular, this form will frequently go off without more trouble; but from exposure to cold and other causes it often goes on to produce more formidable symptoms, the disease extending down into the gullet, or into the larynx and trachea. It will often be found that the primary sloughs have almost disappeared, and that some of the consequent ulcers have healed before these serious secondary affections occur.

In the severe form of attack the patient is affected with violent headache, rigors, great prostration of strength, and with a prickling soreness and stiffness of the throat; the skin soon becomes very hot and dry, the face is then generally a good deal flushed, and often the eyes have a bloodshot appearance; the pulse ranges from 112 to 120 in adults, and from 120 to 160 in children. At this stage the tongue has a particular appearance, the papillæ seem a little elevated above the rest of the surface and red (in many cases each papilla looks as it were a point of blood upon the tongue), the back part of the palate and throat is more or less affected with a dark-coloured inflammation very similar to gangrenous inflammation of the skin, which terminates in and is surrounded by a more healthy-looking inflammation. The next day the febrile symptoms still continue, the tongue is covered with a dirty white fur, and that part of the throat which was occupied by the dark-coloured inflammation is now covered with a white ash-coloured or dark slough, according to the malignancy of the case. In many instances the margin of the slough, which was the day before occupied by the healthier, is now surrounded by the dark-coloured inflammation, the circumference of which insensibly terminates in and is surrounded by the healthier-looking inflammation; and there is reason to dread the farther extension of the sloughing in the same manner, until the purple coloration is distinctly circumscribed by the brighter red of healthier inflammation.

The whole extent of the throat, at first occupied by the purple inflammation, is in many cases covered next day with one uninterrupted slough, in others by several sloughs of different sizes, from a small split-pea to the size of a bean, the inter-spaces still retaining the dark colour. The disease often extends rapidly in this manner into the pharynx and gullet, and from thence, I suspect, into the stomach, or into the larynx and trachea, producing suffocation. About the third or fourth day, if the disease ceases to extend, ulceration begins to take place around the circumference of the sloughs, and the process of separation commences. Some of the sloughs become detached about the fifth or sixth day, according to their depth, exposing a foul, ulcerated surface, deep in the middle, and more superficial towards the circumference. When the sloughs begin to separate at the circumference, where the two species of inflammation insensibly terminate in each other, the slough is so thin as to appear little else than inspissated mucus, but, however thin, it will always be found to expose an ulcerated or abraded surface; upon farther separation the slough gradually turns thicker and exposes a deeper ulcerated surface. When the slough is completely detached, if it has extended to any depth, the ulcerated surface will generally be found covered with a dirty-coloured, tenacious lymph, having the appearance of a second slough, through which the granulations are seen shooting up in the form of a number of small red points. After the separation of the sloughs, if the disease

has been checked, the ulcers fill up with granulations and heal, the appetite returns, and the patient advances gradually to a state of health; but frequently, when the disease has been extensive and deep, the healing process, after it has gone on to a certain length, becomes stationary, the appetite does not improve, or becomes worse, the patient complains for some little time of tenderness, increased on pressure, about the region of the stomach, or over part of the belly, and often attended with slight griping pains in the bowels, which are sometimes rather costive, but in general loose; the food is also frequently rejected by vomiting. In some cases where these symptoms have continued for four or six days, the patient suddenly faints, or at other times is apt to faint for a day or two, when raised from the horizontal to the upright position. After fainting, the extremities become cold, the pulse weak, and perspiration breaks out over the whole body. By the use of stimulants and warm applications to the extremities, the heat may return and the faintness go off for a little time, but in general the patient dies within forty-eight hours after the accession of these symptoms. In these cases the disease assumes very much the character and appearance of abdominal inflammation ending in gangrene.

Symptoms of the Disease when affecting the Larynx and Trachea.—In severe cases these parts are often affected from the commencement of the disease, as is indicated by a degree of hoarseness or wheezing attending the other symptoms, and then, if the epiglottis and rima glottidis can be brought into view, they will be seen at first affected with the purple-coloured inflammation, and then covered with a slough or sloughs. In some cases these seem to be the parts chiefly affected, when, perhaps, only the lower half of the tonsils will be covered by a dark or ash-coloured slough. In others the whole of the tonsils, and, in the very bad cases, the top of the larynx, the whole of the tonsils, the throat and back part of the palate are affected with sloughing.

In many cases the air-passages become affected after a mild attack of the disease in the throat, when the patient has been imprudently exposed to cold and moisture, conjoined with inattention to the bowels and diet. These last are the cases which are very apt to be mistaken for croup, the sloughs having sometimes mostly all separated from the tonsils, and the ulcers being almost healed, before the symptoms of affection of the larynx appear. When called to these patients you find them affected with great dyspnoea, accompanied by a hoarse, wheezing noise, very like croup, and a dry, hoarse cough; upon inquiring, you are usually told that they have been drooping for ten days or a fortnight, and been complaining a little of their throats, and that they have had a hoarse or rough cough for the last three or four days, which has been gradually increasing until the present severe symptoms came on. In such cases you will always find, upon minute inspection, either part of a slough adhering to the lower part of one of the tonsils, or

covering the margin of the epiglottis and rima glottidis, or an ulcer on one or both of the tonsils, from which a slough has previously separated. In whatever way the disease commences, it ultimately runs the same course.

When the air-passages are the chief seat of the disease, the patient is first seized with hoarseness, and a dry, wheezing cough, with a feeling of rawness or soreness in the fore-part of the throat and top of the breast; in two or three days there is an increase of the wheezing and hoarseness, attended with some difficulty of breathing and aggravation of the dry cough. As the disease advances the dyspnoea becomes rapidly more urgent, and the hoarse, wheezing noise attending respiration more intense, and a little thin mucus is now brought up by the cough. As these symptoms go on increasing, bloody mucus is often discharged by the incessant cough, with now and then a mixture of pus or portions of slough, the breath is very fetid, the wheezing and constant cough seem as if they were often produced by something hanging partly loose in the windpipe; if free expectoration does not now speedily take place, the patient is threatened with fits of suffocation, and frequently dies in them, without sloughs of any consequence coming up. When there is great dyspnoea, the countenance assumes more or less of a livid hue, and at every inspiration the abdominal muscles are drawn in towards the spine. If the patient neither dies from suffocation, nor is relieved by copious expectoration, the wheezing dyspnoea and lividity of countenance increase, the whole body becomes somewhat livid, the extremities become cold, the pulse very quick and weak, until it ceases to be felt, and the patient, after these symptoms have continued for some time, seems to die from debility and want of due oxygenation of the blood, apparently owing to the mucous membrane of the minute branches of the bronchi being covered with sloughs.

The patient may die from, and is often affected with, suffocating fits after copious discharge of fetid pus and sloughs has taken place; the expectoration will sometimes stop suddenly from exposure to cold, bringing on spasm, and there is great risk of the patient dying if expectoration is not speedily re-established.

In this disease the sloughing and ulceration frequently extend to the nose and frontal sinuses. The glands of the neck generally become enlarged, and buboes occasionally form in the neck, but not so frequently as in the cynanche maligna attending scarlatina. Blisters, if not particularly attended to, are apt to get foul and gangrenous. If, previously to the accession of the disease, there has been any wound, ulcer, or abrasion of the skin on any part of the body, it is apt to become foul and gangrenous. The liver seems often to be in a deranged state at the beginning of the disease; for, if proper medicine is administered, the stools consist to a great extent of dark, vitiated bile.

In many cases where the throat has been the part chiefly affected

at the commencement, the disease will seize on the larynx, spreading down into the trachea, after the sloughs have separated, and while the ulceration of the throat is healing.

I have seen several cases in adults, in whom the larynx and trachea had been chiefly affected, where symptoms of pneumonia supervened during the copious expectoration of sloughs and fetid purulent matter, and where I found it necessary to employ venesection, according to the strength of the patient and urgency of the disease, in order to arrest immediate death, for, along with the symptoms of pneumonia, the patients were frequently seized with fits of dyspnoea, threatening suffocation. In one case of this kind, where the patient had been bringing up sloughs and fetid pus for seven days, the dyspnoea was so great that she could not allow a person to pass between her and the open window without a feeling of impending suffocation.

In cases where the sloughing and ulceration spread extensively over the membrane of the nostrils and frontal sinuses, hæmorrhage from erosion of the blood-vessels is sometimes very troublesome and dangerous. I lost a patient in the country from hæmorrhage from the nose having been allowed to continue too long.

2. *Diagnosis.*—This disease is to be distinguished in the early stage from malignant sore throat attending scarlatina, by the inflammation preceding the sloughing being of a darker hue than in scarlatina; by the sloughing following the attack more quickly, generally in twenty-four or thirty-six hours; by the disease extending itself almost solely by sloughing, whereas the cynanche of scarlatina extends by sloughing and ulceration at the same time; by the pain of swallowing and enlargement of the glands of the neck being less at the commencement; by there being much less swelling within the throat than in the cynanche of scarlatina; but chiefly by the absence of the eruption attending scarlet fever. In illustration of the less amount of pain in deglutition in this disease as compared with scarlet fever, I may mention that I have seen patients with their tonsils covered by an ash or dark-coloured slough have very little trouble in swallowing even stimulating liquors; it is only after the sloughs separate that there is much pain in deglutition,—the disease at first appearing to extend hardly deeper than the thickness of the mucous membrane.

Small ulcers are sometimes seen on the tonsils in common inflammatory sore throat; but the absence of the dark-coloured inflammation, and the fact of these ulcers being originally pustules about the size of millet-seeds, serve sufficiently to distinguish the disease;—whereas in cynanche maligna, however small the ulcers may be, they are at first covered with sloughs.

In some of the milder cases, where the patient has been much exposed to cold, a degree of phlegmonous inflammation accompanies this disease, marked by considerable swelling of the tonsils, and great redness surrounding the small patch of gangrenous inflammation or slough.

3. *Treatment*.—The indications of cure are—1st, To check the force of the disease at its onset; 2d, When it has occurred, to prevent its further extension; 3d, To promote the separation of the sloughs and the healing of the ulcers; 4th, To support the strength during these processes, without stimulating the system too much.

The violence of the disease may be much lessened by giving an emetic in the first stage, and following it up as quickly as possible by a powerful cathartic and the application of a large blister round the throat; the pulse and other symptoms are not in general such at the commencement as to induce the employment of venesection or other depleting measures. In severe cases, along with shivering and headache, very great prostration of strength is often the first symptom; there is often depression of the vital powers to an alarming degree in a few hours after the first feeling of deviation from health. In one case of a mixed nature, where cynanche maligna was in the family, and where, along with the characteristic phenomena of the disease, there seemed also a great deal of phlegmonous inflammation, I employed venesection immediately before the other remedies; although the patient was relieved considerably, yet the formation of sloughs took place forty-eight hours after. If the blister is skinned at the first dressing, resinous ointment should be applied, and the surface should be well washed twice a-day; in this way it will not generally be troublesome; but under milder treatment, it is very difficult to prevent the blistered surface from becoming foul and gangrenous.

For fulfilling the second and third indications, I have found the following mixture the most effectual of anything I have ever used or seen used; and from repeated experience of its good effects, in conjunction with the other means, I can now rely with some degree of confidence on its power in this disease:—

R Bals. Copaibæ,
Pulv. Gum. Acaciæ, ā ā ʒss.
Tinct. Opii, ʒj.
Aq. Acetat. Ammonia, ʒvj.—M.

A tablespoonful for adults every two, three, or four hours, according to the urgency of the symptoms. I begin with this medicine as soon as the stomach will retain it after the vomiting. I also give laxative doses of calomel, rhubarb, and ginger twice a-day, once a-day, or every other day, according to the effect of the medicine and state of the discharges: generally these bring away dark-coloured fetid stools. Where the bowels are obstinate, it is at times necessary to give castor-oil, or some other mild purge. After the first smart action of the bowels, it is not advantageous but rather hurtful to employ very severe purging, as it reduces the strength without preventing the extension of the disease. I continue the use of the copaiba mixture for some time after the ulceration consequent upon the sloughing is healed, as a precautionary measure for preventing the progress of the disease into the alimen-

tary canal. As recovery goes on I lengthen the intervals between the doses, so as to give it only once or twice a-day, before laying it aside altogether.

I have found a nauseating mixture of squills, antimony, and laudanum very useful for promoting the separation of the sloughs, even when the disease is confined to the throat, but of very great benefit where the disease has extended into the larynx and trachea; it seems to assist in the quick separation of the sloughs, and allay irritation, thereby alleviating and preventing those spasmodic fits that threaten suffocation. These spasms appear frequently to arise from a portion of slough being loose at the one end and fast at the other,—the free portion acting as a foreign body suspended in the larynx or trachea, producing the incessant cough and the spasmodic affections above alluded to. The doses and relative proportions of the different ingredients of this mixture must be regulated according to the urgency and degree of the different symptoms. In cases where the danger of suffocation from a partially detached slough has been very great, I have often administered a dose every ten or fifteen minutes, until the patient either became easier or vomited. Although this nauseating medicine is of great use in favouring the detachment of the sloughs, it does not seem to have much effect in arresting the progress of the disease, and none in promoting the healing of the ulcers. Its employment in the last stage should be dispensed with.

I have found benefit from the use of the aqua acetatis ammoniæ et tinctura opii, without the bals. copaibæ; but the good effects of the former are much more decided when combined with the balsam. The mixture of copaiba and acetate of ammonia exerts a beneficial local action as it passes downwards, to obtain which it should be swallowed slowly and by itself; but it acts much more powerfully through the medium of the constitution, in checking the extension and changing the nature of that particular species of inflammation of the mucous membrane which constitutes this disease.

The gargle I generally employ consists at first of equal parts of port wine and vinegar, but the proportion of the wine is increased, and that of the vinegar is diminished, as the sloughs separate. Much dependence ought not to be placed on gargles; for if the disease is not attacked by constitutional means, any local application has but little effect, either in staying the progress of the disease, or in bringing about resolution of the inflammation, and thereby preventing much sloughing; neither are local agents of much service in promoting the separation of the sloughs, nor in disposing the consequent ulcers to granulate and cicatrize. Indeed, it is often to but a small portion of the diseased parts that a gargle can be applied, for no gargle can be introduced into the larynx and trachea, neither can a gargle reach the mucous membrane lining the nostrils and frontal sinuses; and these parts are often very extensively affected. I have not often employed cayenne pepper in this disease, but where I did, no benefit seemed to accrue from its use farther than from any

other gargle. Cinchona, so far as I have been able to observe, appears to be a useless remedy in this complaint at its commencement. During convalescence, rhubarb and magnesia with calumba is of much more use as a tonic than bark.

I have employed venesection with advantage in the cases of three adults, where there had been extensive sloughing of the larynx and trachea, and where, from the symptoms, the inflammation attendant upon the consequent ulceration seemed to have descended into the substance of the lungs. In one of these cases the patient was expectorating great quantities of fetid bloody pus and sloughs at the time when I took four cupfuls of blood, which was much buffed. In another, the patient could not breathe, but was stooping with her head literally *over* a strong fire, and was so weak that the abstraction of two-thirds of a cupful nearly produced syncope, which, however, was prevented from being complete by having recourse to the horizontal posture; the loss of that small quantity, which was buffed and cupped, gave the patient much relief; but although a blister and the other remedies were had recourse to, it was twice necessary afterwards in the course of her recovery. The patients on whom venesection was practised experienced great relief from it, and all of them eventually recovered.

Great care must be taken to support the strength during the progress of the disease, by mild nourishment and cordials; but over-stimulation is hurtful, particularly at the commencement. The large glandular swellings, which are frequently met with, I am afraid often owe their origin to the too free use of wine at the commencement of the disease.

4. *Age*.—I have had patients of all ages, from the infant on the breast to the adult of 35.

5. *Secondary Affections*.—Incurable hoarseness, ulceration of the cartilages of the larynx, loss of the soft palate and uvula, allowing portions of the drink and food to return through the nose, loss of hearing, and suppurations in the neck, are all sequelæ of this disease. Buboes more often happen in the neck after the cynanche maligna of scarlatina than after this affection.

6. *Causation*.—This disease is endemic or takes its growth in this country; but it is not confined to any particular district. It prevails at times epidemically; at other times solitary cases are to be met with. It appears to be a very contagious disease, particularly in the case of young people. The time when I have seen it prevail epidemically has been in the end of autumn, and through the winter and spring months; the solitary cases are most generally met with in summer. Since I began practice it has prevailed more in the country than in the town, but that may perhaps be partly ascribed to the country people not being so careful to avoid exposure to the contagion of the disease as towns' people are.

7. *Frequency*.—I can give no account of the number of cases I have met with, but their number has been considerable.

8. *Recurrence*.—I have not met with any individual who has been attacked oftener than once with this disease, although I have seen a few cases where there was an attack of this species of cynanche, and one of the cynanche maligna of scarlatina, at an interval of a few years.

9. *Connexion with Scarlatina*.—This disease is altogether independent of the existence of scarlatina. At the commencement of my practice, I had formed the opinion that scarlatina and this form of sore throat were modifications of the same complaint, and, consequently, was not so easily satisfied of the proofs of their being different diseases as if I had been of a contrary or doubtful opinion. I consider this as being the cynanche maligna of authors.

10. *Relation to Idiopathic Croup*.—I consider that croup is quite distinct from this disease, and I have seen many cases where no sloughs could be observed either in the throat or on the tonsils; at the same time, I am convinced that this disease, cynanche maligna, is often mistaken for croup. When we hear of several members of a family being affected with and dying of croup about the same time, and of cases of croup continuing ten days or a fortnight, there is reason to dread that it is this disease. In the districts of country where this form of cynanche has been epidemic, idiopathic croup is not particularly prevalent.

I append the following cases as illustrative of the preceding remarks.

CASE 1.—On 4th October 1820, at 7 P.M., I was called to visit A. M., æt. 26 years, a labourer, living at a distance of five miles. On arriving I found him complaining of sore throat and difficulty of breathing. The patient stated that he had been ill for eight days, and had been at first seized with coldness and slight shivering, soreness of bones and debility, attended by a pricking pain in the throat, particularly about the root of the tongue, and that he had also had considerable dyspnœa, owing, as he thought, to the swelling and pain of the throat. He had taken a dose of salts two days ago, which operated well, and had applied poultices round the throat, till last night when a blister was had recourse to, which rose well, and seemed to relieve his breathing; bowels had not been constipated. On examination I found that the breath had a putrid, fetid smell; the tongue was very foul; the throat was covered with dark ash-coloured sloughs, as far down as could be seen; the left tonsil and palate, from the backmost grinder downwards, and from the root of the tongue to the uvula, were covered by one uninterrupted slough, seemingly very deep at the lower part, and more superficial towards the palate, so much so that it seemed to terminate in inspissated blackened mucus; but upon detaching a part of the slough from the palate, where it seemed to be most superficial, a new surface was uncovered, deepening into a corroding-looking ulcer towards the throat, and which bled, although I used very little violence in detaching the portion of slough which appeared to have previously begun to separate; the back part of the throat seemed also covered with dark sloughs; the uvula was similarly affected, there was one continuous slough on its left margin, but towards the right side, and also of the throat, the sloughs were interrupted here and there by an inflamed surface; the right side of the throat was thickly studded with sloughs, some as small as pustules, and others larger than split-pease; a fetid discharge came from the nostrils, and part of the drink taken returned through the nose; eyes a little bloodshot; no headache; no eruption; parotids slightly swollen; voice rather rough; skin not very hot, but somewhat dry; pulse 60, regular, and as to

strength about natural. I directed the following dose to be taken immediately:—℞ Calomel, gr.vj.; Pulv. rhei, jalapæ, potass. bitart, āā gr.viij.; Pulv. zinzib. gr.viij.; also a tablespoonful of the copaiba mixture, to be taken in two hours after the mercurial dose, and to be repeated every four hours. Three teaspoonfuls of the following mixture were ordered to be taken at any time when the feeling of suffocation was troublesome:—℞ Antimon. tart., gr.ij.; tinct. opii, ℥i.; acet. scillæ, ℥i.; Aq. cinnamom, ℥ii.—M. The blistered surface was skinned and dressed with resinous ointment. Ordered a gargle of port wine and vinegar; strength to be supported by mild nourishment, and by cordials sparingly.

6th October.—Physic operated well, and brought away a quantity of blackish green matter; took the antimonial-squill medicine twice yesterday, when the breathing was affected, with relief to the dyspnœa; vomited several times in the night between the 4th and 5th instants; slept a good deal last night, and feels in every way more comfortable; still complains of pain in throat extending to the ears; tongue foul, and breath fetid; some of the small ulcers on right tonsil, etc., have cleared off, and the sloughs upon the left are beginning to separate at the anterior part upon the palate; but the left tonsil is covered with a large ash-coloured slough, as far down as can be seen; the mucous lining of the nostrils seems also affected; pulse 64, and regular; the roughness of voice is not increased; can swallow with more ease. Ordered a mild mercurial cathartic; continue the copaiba mixture and other medicines.

8th.—My assistant reports that the powder operated twice yesterday. Patient has taken the mixture regularly; slept tolerably; now feels more pain on swallowing; sloughs are separating from the palate and right side of throat; pulse about 60. Ordered a cathartic powder, and to continue the mixture.

9th.—Powder has not operated; the patient so weak to-day that he fainted when taken out of bed to get his throat examined; pulse 64, and weak; most of the sloughs are thrown off the throat, and deep extensive ulceration is to be observed on the parts from which the sloughs have separated; the ulceration looks foul, the points of the granulations are shooting through a tenacious white matter or second slough, with which the most of the ulceration is covered; has been drinking some wine, ale, and chicken broth; little appetite. Ordered four glasses of wine and a pint of porter in twenty-four hours.

10th.—Has had no stool for two days; throat is cleaning slowly; very deep ulceration of the side of the throat is now to be seen, also of the palate and uvula. Ordered two compound gamboge pills to-night, and two to-morrow morning; continue the copaiba mixture, cordials, and chicken-broth.

14th.—Is now much stronger, and general appearance much improved; throat almost quite clean, but there is still very deep ulceration, and it has not made so much progress in healing as I expected it would have done; bowels regular; pulse 76; has discontinued the mixture for these two days, which must be resumed three times a-day. Ordered pulv. Gregorii, a teaspoonful twice a-day. The uvula will be much diminished in size from the ulceration.

17th.—7 P.M. Received an express, summoning me directly, as the patient had turned much worse, and was not expected to live any time. Upon visiting him, I found that he had continued to improve till this morning, when he felt himself more languid and weak, with loss of appetite, and considerable uneasiness about the stomach and bowels, which he felt slightly last night, and which gradually increased until this evening, when he was seized with a fainting fit, although lying in bed and apparently asleep at the time. During the fit his extremities became cold, and the bystanders were unable to understand what he said for more than half an hour; they gave him warm negus, and applied warmth to his body; bowels had been regular; he has taken the copaiba mixture and the powder till this day, when he declined them. Upon examination, I found him in a very weak state; pulse 120, small and weak; the heat is now uniform over his body; although weak he is quite sensible; has had two or three faintish turns since the message was sent off, but none so severe, nor so long continued as the first; he describes them as coming on with great uneasiness and pain in

his bowels, and about the pit of the stomach; the deep ulcer in the throat is more improved since last report. Although cordials, stimulants, and nourishment were freely administered, he gradually got weaker, and died on the 20th.

CASE 2.—On 6th October 1820, I was called to visit the wife of J. M., blacksmith, who lives about one-fourth of a mile from A. M. (Case 1.) Found her complaining of sore throat since yesterday morning; complains also of general disorder, weakness, and soreness of the bones, which also came on yesterday morning, and increased, as well as the affection of the throat, towards night; tongue much furred in the middle, and cleaner towards the sides, where the papillæ appear red, and as it were points of blood; skin hot and dry; pulse 116, and rather small; both tonsils are covered with a yellowish, white slough; the slough on the right tonsil goes almost as far down as can be seen, but the slough on the left extends farther down than can be seen; the uvula and palate are quite free from ulceration and sloughs, but affected with a dark red-coloured inflammation. Bowels have been regular. Patient is at present nursing; has not been seeing A. M., although her husband has; but they do not sleep in one bed at present. Ordered an emetic, to be followed by a mercurial cathartic, and a blister round the throat, with the copaiba mixture to be taken in tablespoonful doses every four hours, beginning as soon as the stomach is settled after the emetic and purgative.

8th.—My assistant reports that the emetic acted moderately, and the cathartic powerfully. Patient has taken the mixture regularly, which she thinks relieves her greatly for the time; sloughs on the tonsils of a dirty white colour, and upon one side of the palate a continuous slough extends from the tonsil fully as far forward as the backmost grinder; at times there is considerable difficulty of breathing, from a feeling of stuffing at the lower and fore-part of the throat; tongue foul and breath fetid; blister rose well; no stool to-day; pulse quick and weak; she gargles frequently. Ordered a mild mercurial cathartic; also the antimonial-squill mixture, in the dose of three teaspoonfuls at any time when the breathing is affected. Continue beef-tea, mild nourishment, and a little wine.

9th.—Powder has not operated; slept better last night; has not been so much troubled with her breathing as yesterday; tongue foul, breath very offensive; the sloughs upon the tonsils have assumed a dark ash colour; the palate, as far forward as the grinders on the left side, is covered by an irregular slough which has not yet begun to separate; the sloughs cover all those parts that were affected by the dark-coloured inflammation; pulse 98, and weak. Ordered four compound gamboge pills, also three glasses of wine daily, and some porter; continue the copaiba mixture.

10th.—Pills operated well; breath still very offensive. Sloughs are now separating, and an ulcerated surface is laid bare, not so deep as in the preceding case. Pulse 96, and rather stronger. Continue medicines, etc. Yesterday two of her children became affected, and are not worse to-day. Ordered them an emetic, mercurial cathartic, and the mixture.

14th.—Powder operated once, since which there has been no stool. Sloughs all thrown off, and a great extent of ulcerated surfaces healed, but the spots where the sloughs have been deepest are still sore; much improved in strength, appetite, and appearance. Continue mixture thrice a-day, also wine and porter. Ordered compound gamboge pills, to be used as aperients, likewise pulv. Gregorii twice a-day; the blistered surface to be dressed with equal parts of cerate and ungt. resinæ, as it is very sore. Children well.

CASE 3.—On 8th October 1820, I visited D. F., aged between 30 and 40; who lives three miles farther on than A. M. Worked during harvest in the neighbouring farm to where A. M. lives; has been ill about ten days; had been seized in the usual manner, except that febrile symptoms do not seem to have been so severe as in some others. Continued to work at his trade of a tailor till within these two days. Upon inspection I found back part of palate, uvula, and both tonsils almost entirely covered with sloughs, which in some parts are beginning to separate; some of the sloughs are very dark in colour; breath

very fetid; considerable characteristic hoarseness and dyspnoea, on account of which he is obliged to sit up in bed for the most part; is much troubled with cough, and I am inclined to believe that the larynx is much more affected than in A. M.'s case; also great difficulty in deglutition; tongue foul; pulse little more than 60; is of a more robust frame than A. M. Let him have as much beef-tea or chicken-broth as he can take; also beer and very mild nourishment. Ordered a mercurial cathartic to be taken immediately, and the copaiba mixture in doses of a tablespoonful every four hours; a blister to be applied round the throat, to be skinned and dressed with ungt. resinos.

10th.—Received a message that he was rather better and that his physic operated twice; ordered a dose of calomel and jalap to be taken to-night.

11th.—Powder has not yet operated; cough and breathing rather better; he expectorates a good deal of stinking purulent-looking mucus and sloughs; breath very fetid; sloughs have separated from a good many places, leaving an ulcerated surface, but not so deep as in A. M.'s case; swallows with more ease; can now lie down for a considerable time; pulse 66, and regular; feels a little appetite; blister rose well and appears healthy; the mixture smarts his throat a good deal, but he always feels easier for some time after. Continue the mixture; give mild nourishment; let him have a little porter and wine.

13th.—Heard to-day that he was still improving, and was now able to sit up some time; still hoarse, although much better in that respect; troubled with cough and expectoration of fetid matter occasionally. Ordered the mixture to be continued four times a-day, and aperients to be taken when necessary. Did not see him again, but heard occasionally from him; he gradually got well.

CASE 4.—On 7th November 1820, I was called to visit J. W.'s child, *æt.* 3½ years; his wife had already passed through the disease some weeks ago. This child had been visited yesterday in my absence by another practitioner, who declared it a case of croup, and ordered the warm bath, an emetic, and cathartic; the emetic had operated well. I found her labouring under great difficulty of breathing; inspiration accompanied by a hoarse, wheezing noise very much resembling croup, but yet to me somewhat different; considerable lividity of countenance; much teased with a hoarse cough; could not lie on account of her breathing, obliging the attendants to carry her almost constantly about the room and often to the door for air; pulse very quick; tongue foul; breath slightly fetid; upon a common inspection, throat clear and but little inflamed. On placing the child completely opposite the light, and powerfully depressing the middle and back part of the tongue, the upper part of the larynx was brought into view, and a dark-coloured slough could be distinctly seen covering the margin of the glottis and epiglottis, which confirmed my suspicion and put the nature of the disease beyond all doubt. Let a blister be applied round the throat and over the sternum. Ordered two 3-gr. doses of calomel, one to be taken immediately and the other in four hours; a dessert-spoonful of the copaiba mixture every three hours; let her have beef-tea, ale, or any mild nourishment which she will take.

8th.—First dose of calomel operated well, and the second was not administered; stools dark and fetid; blister has risen well; has taken the mixture pretty regularly, and seems upon the whole rather easier, particularly for some little time after getting the mixture; has got up a little mucus mixed with blood. Remove the skin from the blistered surface and dress with ungt. resinos; continue the copaiba mixture, and give the other dose of calomel.

10th.—Ordered a dose of calomel, and to continue the mixture.

11th.—A dose of calomel.

12th.—Symptoms, till last night, continued much the same as on the night of the 7th and 8th; but on the whole easier than on that of the 6th and 7th; the expectoration more copious and purulent, with an admixture of blood; but last night about bedtime her breathing became much more difficult, and hoarse wheezing noise more intense, every now and then threatening suffocation; and she coughed almost incessantly. For about four hours the attendants thought she would have gone almost every minute, and during that time were afraid to

give her either medicine or drink, when her grandfather thought, as she neither got better nor died, he would try her with some of the mixture, as he had seen it relieved her before; he gave her about double the usual dose, which she swallowed, and very soon became easier. She is still much worse than on any of the last three days, and is now and then threatened with fits of suffocation. Ordered the antimonial-squill mixture in the dose of a large teaspoonful every two hours until she is easier, and at any time when the suffocating fits threaten; continue the copaiba mixture.

13th.—Seems considerably easier in breathing; suffocating fits have not occurred nearly so often nor so severely; expectorates a great quantity of pus, mucus, and sloughy-looking substances; breath very fetid. Continue the copaiba, and give the nauseating mixture only when the breathing requires it.

14th.—Continue the copaiba, cordials, and nourishment.

15th.—Ordered calomel gr.ijj.

18th.—Continue the mixture, etc.

21st.—A dose of calomel and jalap to be given.

25th.—Ordered a cathartic powder. The symptoms have continued to improve gradually from the 14th up to this time; the patient now breathes with comparative ease; there is but slight hoarseness and wheezing in common respiration, but still considerable when she cries, and the cough is still hoarse; she had few threatenings of the suffocating fits after the 14th and 15th. A small swelling over the left side of the neck is now enlarging.

31st.—Symptoms much improved; the swelling in the neck has now attained a very considerable size, but is still very hard, although it has been poulticed for some days. Let the swelling be besmeared, morning and evening, when the poultice is removed, with an ointment of ungt. resinos and red precipitate of mercury.

3d and 4th December.—Ordered a dose of calomel and jalap.

6th.—The swelling having been very soft for some days and not appearing likely to burst, I opened it and a large quantity of purulent matter was discharged. The child gradually got well.

CASE 5.—On 14th April 1821, I was called to visit the daughter of Mr J., who lives six miles from this, æt. 7 years. She has been ill for ten days, and has been attended by a physician, who pronounced the disease to be croup. She has been treated on the calomel plan, by which she has been freely purged, but the mouth is not much affected. A blister has been applied to the breast. The patient is suffering from great dyspnoea, and for the last twenty-four hours has been seized frequently with suffocating fits. She cannot lie in bed, but must be carried through the room, the window being constantly open, on account of her breathing. Respiration is accompanied by a hoarse, wheezing sound, very like croup, but appears to me somewhat different. There is incessant cough, attended with little expectoration, except for the last thirty-six hours. She has expectorated at times some thin mucus, streaked with blood, and yesterday two masses resembling pieces of rotten skin were brought up. She does not complain of great pain, but of soreness in the fore-part of the throat and chest, in the situation of the larynx, trachea, and bronchi. At every inspiration the abdominal muscles are drawn in towards the backbone. The breath is fetid, tongue foul, pulse so quick as not to be counted, countenance considerably livid, and the eyes staring and somewhat suffused. Upon common inspection, the throat appears quite clear; but upon placing the patient opposite a strong light, and depressing the back-part of the tongue so as to bring the epiglottis into view (which is done in this case with much difficulty on account of the dyspnoea, the attempt producing such a stifling or sense of suffocation as to make her insensibly offer great resistance), a dark slough is seen, about the size of a small bean split, adhering to the lower part of the left tonsil, and likewise upon the rima glottidis of that side. The sloughs seem surrounded with ulceration, as if they had been more extensive at one time. The glands of the neck are a little affected. Let a large blister be applied over the breast, and another over the front and sides of the neck;

when risen, let the skin be removed, and the surface dressed with ungt. resinos. Let the following medicines also be given:—*R* Tinct. opii, \mathfrak{z} j.; antim. tart., gr.ij.; acet. scillæ, \mathfrak{z} j.; *Aq.* cinnamom, \mathfrak{z} ij.—*M.* Two large teaspoonfuls to be given immediately, and the dose to be repeated every six hours, or at any time when the fits of suffocation threaten. *R* Bals. copaibæ, pulv. gum. acaciæ, $\mathfrak{a}\mathfrak{a}$ \mathfrak{z} ss.; tinct. opii, \mathfrak{z} i.; *aq.* acet. ammoniæ, \mathfrak{z} vi.—*M.* A half tablespoonful to be given in an hour after the first dose of the antimonial mixture, and the dose to be repeated every three hours. A powder, containing calomel, jalap, rhubarb, and ginger, to be given at night.

15th.—Appears easier to-day. Has slept a good deal through the night, which she had not done for two days before. Dyspnœa not so great; has had only two suffocating fits, which were not so severe as formerly. Cough not quite so troublesome; has expectorated a good deal, the sputa being now changed from a tough, bloody, thin mucus to a muco-purulent-looking substance, with some streaks of blood and sloughs. Pulse 140, small and weak. Bowels open. Countenance less livid. A general perspiration over the body, and heat more agreeable. Blisters rose well. Has taken some chicken-soup and butter-milk, which she has at pleasure. A little wine-negus has been offered her, but she does not care for it. Continue the mixtures as formerly, which have been taken very regularly; the powder containing calomel, etc., to be taken at night. Let her have some ale, and support the strength by mild nourishment frequently administered.

16th.—Easier in every respect. Expectoration increased in quantity, and changed to pus, mixed with pieces of dark sloughs. It now comes up with much less difficulty. Pulse from 120 to 130, still weak. Sleeps a good deal. Wheezing and hoarseness not so intense. Bowels open. She takes considerable quantities of chicken-broth and butter-milk, as also her medicines, regularly. Continue the copaiba mixture as before; but let the antimonial-squill medicine be administered every eight hours only. The purgative powder to be taken at night.

18th.—Still improving. Dyspnœa, hoarseness, and wheezing much less, but still great when she cries. Pulse 110 to 112, rather stronger. Cough much diminished. Expectoration easily and in great quantity. Breath still fetid, as well as expectorated matter; but less so than formerly. Bowels open. Continue the copaiba mixture as before; but the antimonial twice a-day only. Pulv. calomel, etc., every night.

21st.—Progressing favourably in all respects. The expectoration is now diminished, muco-purulent in character, with occasionally a portion of slough or bloody pus. Has little hoarseness or dyspnœa, unless when she makes exertion. Cough still continues; but only when she expectorates. Pulse about 100. Bowels open. Appetite beginning to return. Has not taken the medicines quite so frequently for the last two days. Let the copaiba mixture be administered four times a-day, and the antimonial at bedtime only; and let the bowels be kept open by calomel and rhubarb laxatives. From this time the case went on progressively to recovery. She was a little hoarse for a considerable time after her other complaints had disappeared.

CASE 6.—On 25th August 1821, I was requested to visit A. G.'s daughter, æt. 2½ years, who lives at Newton of G. She is supposed to be ill of croup. At eleven o'clock A.M., I found her affected with a dry cough, great dyspnœa, and the respiration accompanied by a wheezing noise. At every inspiration the abdominal walls were drawn inwards. Tongue foul; pulse too quick to be counted; face a little livid. She could not be laid down on account of her breathing. Bowels have been rather costive.

I was informed that, on the 15th inst., the child, having been previously in good health, was seized, while at tea, with a great shivering and weakness, and towards evening had something like a fit, as her mother thought. After that she continued to go about, but in a drooping state; her appetite was gone; and she complained of some soreness in the throat, and was affected with (to use the mother's expression) a rough cough. On the evening of the 22d inst.,

her breathing became affected with wheezing, which, along with dyspnoea, has gone on increasing up to this time. A leech had been applied to one of the feet last night; a warm bath had also been used; but these have given no relief. Measles have been prevailing very generally in the neighbourhood. A brother of the patient is at present lying ill of measles in the same room. No appearance of any eruption in her case. Upon inspection of the throat, the tonsils on each side are to be seen covered with an uninterrupted extensive ash-coloured slough, which extends down into the throat as far as can be seen; but, owing to the resistance the child makes, it is impossible to bring the epiglottis into view. I directed one of the following powders to be given immediately, and repeated every two hours till further orders:—℞ Calomel, gr.xij.; pulv. antimon., gr.vj.—ℳ., et div. in chart. vj. A blister to be applied to the chest and around the throat; the child to be supported by strong broths, milk, or ale. At seven P.M., I received a message that the patient had got four of the powders, and that the bowels had been very freely moved about five o'clock, shortly before the messenger left; that she was to get another powder at seven o'clock, and seemed upon the whole rather easier than she had been. Let the sixth powder be given at six o'clock to-morrow morning. Let two large teaspoonfuls of the copaiba and acetate of ammonia mixture be given as soon as possible, and the dose repeated every two hours. Two teaspoonfuls of the antimonial-squill mixture to be given in an hour after the copaiba mixture, and the dose repeated every four hours.

26th.—Received information that the child was much worse by the time the messenger got home last night, and that she died in the course of the night.

These cases and observations having been noted in the hurry and turmoil of active practice, for my own use and reference, are consequently in rather an undigested form. I have considered it better to record them as they are than to make any attempt at regular arrangement. The observation and experience of the forty-two years which have intervened since these statements were committed to writing, corroborate their correctness, and the success of the practice as a whole; so that for long I have undertaken the treatment of these cases with the same confidence of a favourable result as I do the treatment of other acute severe diseases, instead of approaching them with fear and trembling, as I used to do before I adopted the plans of treatment described. I have found occasion to diminish and modify the proportion of copaiba in the mixture, according to the age of the patient and the state of the stomach. In some cases, where symptoms indicative of extension of the disease to the alimentary canal, had led to prolonged administration of the copaiba, the eruption often associated with the use of that substance made its appearance without being productive of any bad effects.

I have occasionally used the application of the solid nitrate of silver at the commencement, in such a way as to environ the most gangrenous-looking part, with the view of stopping the extension of the diffusive inflammation. On several occasions it has been very advantageously applied to the ulcerated edges of the epiglottis and rima glottidis, when the disease was spreading to the larynx, and symptoms of croup were present. This operation can be accomplished in some cases only. It is of great importance to get it within the rima glottidis. In the mild cases, a sinapism properly applied may be substituted for a blister. Although I formerly

found no benefit from bark in substance, the sulphate of quina is a useful tonic, and can be administered with facility. In the advanced stages, when the parts are clean, raw, abraded, and somewhat granulated, tincture of kino mixed with port wine, and swallowed slowly, is a good medicine.

My further experience confirms me in the opinion that this disease is both contagious and infectious; that it arises endemically, and prevails epidemically; that it is a distinct disease from scarlatina; and that scarlatina maligna is often accompanied with a gangrenous state of the throat, bearing much resemblance to this disease; that it is a distinct disease from genuine croup; and that the treatment by leeching, and the calomel and depleting plan, so successful in genuine croup, is very prejudicial in this disease. It also occurs to me that the epithelial covering of the mucous membrane forms a material part of the sloughs thrown off in the milder cases. Those who have had the larynx and trachea much affected, and in whom there has been much sloughing from these parts, have a husky voice for the remainder of their life, and the mucous membrane of the fauces and throat has a glazed appearance, and seems deficient in the mucous secreting apparatus.

ARTICLE II.—*Diphtheritic Inflammation of Procidant Uterus and Vagina.* By J. MATTHEWS DUNCAN, M.D., F.R.C.P.E., Clinical Lecturer on the Diseases of Women in the Royal Infirmary.

MRS A., the subject of the following observations, has a long medical history connected with her sufferings from prolapsus of the uterus. At present all this is passed over, in order that attention may be confined to the consideration of the diphtheritic disease.

In commencing, I must guard against misapprehension, by saying that I do not here speak of diphtheria, but only of pellicular or diphtheritic inflammation, apart from any real or imaginary constitutional affection.

The appearance of the diphtheritic membrane on the very day of its production was only once noted. On the other occasions of its production, it was not closely examined till after it was probably more than a day old, being then discovered unexpectedly in the course of observing the results of surgical interference for the cure of the prolapsus. But in the end of March, the appearance of an extensive diphtheritic patch, covering the prolapsed cervix uteri, and a large portion of the surrounding vaginal surface chiefly anterior to the cervix, was under daily observation. The woman had been able to be out of bed and go about the ward. At the visit on the 29th she was found in bed, and was evidently suffering considerably, and had feverish symptoms. She said that since the previous day she had had severe burning or scalding pain in the

procident parts, which had become so tender as to prevent her walking or even sitting up. This special burning pain soon passed away.

On exposing the prolapsus, it was found that an entirely new diphtheritic patch had just appeared. It was situated upon the posterior and lateral vaginal walls, and nearly surrounded the older patch of the same disease, with which it was also continuous. The new deposit was of the extent of some inches in length, and above half an inch in breadth. Seen through the thinnest parts of the new membrane, the mucous tissue beneath was at this time evidently red and swollen. The new membrane was elevated above the level of the surrounding healthy mucous membrane. It was not of uniform thickness, being at some parts so thin as to be translucent, at others elevated as if in blisters, and quite opaque. These blister-like parts had a thickness at most of about a line. The colour was opaline white. At various points this tough new deposit was peeled off with the nail. The mucous membrane beneath had the appearance of entireness and health, except that it had a slightly redder tint than the neighbouring unaffected parts. At one point only, a small irregularly shaped, superficial rawness or erosion, little more than a square line in extent, was seen on the peeled surfaces. No blood flowed when the membrane was detached. There appeared to be almost no discharge from the affected parts. The membrane was microscopically examined by Dr Haldane. Its surface was covered by tessellated epithelial scales, in only some of which could a nucleus be recognised. The mass had a glistening or waxy appearance, and on the addition of iodine presented the characteristic reaction of waxy structure, becoming of a well-marked brown colour. When teased out, the mass presented at the edges a finely granular appearance, with a tendency to fibrillation. At some places it seemed to consist of compressed and altered cells.

Examined on the following day, all the peculiar appearances, to the naked eye, of the new diphtheritic deposit were gone. The parts peeled on the previous day were undistinguishable, the lost membrane being restored. The new extension of the disease could for some days be distinguished from the older parts, but the difference between the two was very slight. The membrane was now of a dirty yellowish white colour. Instead of being raised above the general surface of the mucous membrane, it was depressed below it, and the elevated edge of mucous membrane surrounding the exudation was red. This redness was merely a line, being found not to extend beneath the opaque yellowish exudation.

Having thus taken a part of the history of this case from its proper place, in order to illustrate the origin of the diphtheritic deposit, I shall now give a brief account of the case as the events, connected with the disease under consideration, occurred.

Excision of the hypertrophied posterior lip of the cervix was performed on the 11th of November, and was followed by complete disappearance of the hypertrophy of the posterior half of the uterus.

No such fortunate change took place in the elongated, but, at this time, otherwise slightly hypertrophied anterior wall. This anterior wall was three inches longer than the posterior, and continued to be procident. A large abscess was gradually formed in the region of the left ovary, and was opened on the 9th day of December. During the gradual evacuation of this abscess, ocular examination of the parts was not made. On the 6th of January, after all purulent discharge had ceased for about ten days, the parts were again carefully examined. The atrophy of the posterior wall of the cervix uteri continued as before. There only remained some thickening and hardness in the seat of the abscess.

At this time, the procident anterior lip of the cervix and a considerable extent of the adjacent mucous membrane of the vagina, was covered with a dense layer of whitish diphtheritic membrane. It could with some difficulty be peeled off with the nail, and the mucous membrane beneath in an apparently healthy state be exposed. An indistinct marbling with red could be seen on the mucous surface, and blood readily oozed from it if it was not gently handled. Under the microscope the membrane presented an ill-defined fibrillar structure, with numerous young or small cells. Although it was first carefully examined on this day, it had probably existed for some time, certainly not above two or three days. There were no constitutional symptoms, nor did the local disease cause any special complaint.

After the patch had existed for about ten days, acute feverish symptoms began, and a purulent vaginal discharge appeared at the same time. The purulent discharge soon became very copious, and was observed to come from the whole surface of the vagina and cervix uteri. The whole diphtheritic membrane was now rapidly broken up and detached in the course of little more than a day. The mucous membrane laid bare by this separation was almost quite healthy, and resembled in every respect the neighbouring superficially inflamed portions. When this simple gonorrhœa began there was much complaint of pain in the affected parts and in the groins. The discharge after lasting for three days diminished greatly in quantity, and the alarming feverish symptoms abated greatly, as well as the local pains. But this amelioration was immediately followed by the supervention of pain in the back and in the pelvis, and it was found that a recto-vaginal abscess was forming. On the twenty-seventh day of January, this abscess, of the size of a large hen's egg, was freely evacuated of its fetid purulent contents. Thereafter the woman slowly recovered strength.

On the eighth day of February, examination revealed a healthy condition of the mucous surfaces, with the exception of a patch of thin greyish exudation on the elongated anterior lip of the cervix uteri, and an irregular superficial erosion or raw surface of about an inch in length and half as broad, running from above, downwards, across the projecting lip.

On the the nineteenth day of February, this woman made complaint of pain in the back, and had a thin clear discharge found to proceed from the uterine cervical glands. An ocular examination showed that the diphtheritic exudation had reappeared, and had a dirty yellowish-brown colour. The superficial ulceration or erosion which had been seen very shortly before was covered by the membrane, so that its site could not be made out. Portions of the membrane, artificially detached, were examined by Dr Haldane, and found under the microscope to consist of delicate fibrillæ and fibroplastic or young cells.

The exudation increased gradually in extent, but apparently little in consequence of its extending and attacking new parts; its increase was evidently chiefly if not entirely a result of the rapid hypertrophy undergone by the affected parts. These were painful and tender and constantly prolapsed. Both lips of the cervix gradually assumed great dimensions and the diphtheritic affection became chronic.

The membrane was repeatedly examined by Dr Haldane, and exhibited the usual characters of a more or less fibrillated stroma, with a varying proportion of fibro-plastic cells. It varied greatly at different parts and at different times, in the degree of its adhesion to the subjacent mucous surface, and in the degree of its toughness. Its ordinary thickness was a little above that of a wafer. Sometimes it became for a while dry and hard, but a serous moisture generally covered its surface and slightly wetted the woman's linen. Excepting this, no discharge came from it. The parts covering the uterine cervix occasionally became dark in colour from ecchymosis, and then in a few days gradually resumed their usual tint. No part of the membrane became detached spontaneously, and the spaces artificially denuded were always again covered before the visit next day.

Nitrate of silver in solution and in substance was applied to it. Strong hydrochloric acid was also applied to it. But only a temporary discoloration of the membrane was produced.

With the exception of the episode which forms an early paragraph of this paper, little change, except gradually increasing hypertrophy of the parts, took place for several weeks.

In the middle of April, it was deemed absolutely necessary to replace and retain the whole mass in the pelvis, with a view to further treatment of the prolapse. For many days before this was done, it was remarked that the membrane was becoming thinner than before, especially where it covered the cervix uteri. The mucous membrane below it was found to bleed more easily, and to be evidently greatly denuded of its usual epithelial covering. On the cervix, numerous red points, like large granulations, could at some places be seen shining through the patch. Its whole appearance impressed us with the belief that it might over the whole surface be soon supplanted by a superficial ulceration.

The procidentia was cured by an autoplasmic operation on the perineum, and the woman left the hospital in good health.

I am not of opinion that the case which has been just related is rare or unique. On the contrary, I have little doubt that diphtheritic inflammation is the starting point of at least many of the ulcerations of procident uteri. MM. Boys de Loury and Costilhes,¹ M. Robert,² and more recently Dr Tilt,³ have described diphtheritic or pseudo-membranous ulcerations of the uterine cervix; but their observations are confined to cases of this disease attacking the part in its natural situation. I have myself seen the disease affecting both the cervix uteri and the vagina under the same circumstances. In most of these cases the extent of the disease and its gravity have been slight, and its duration has been short. But, in cases such as the one I have related, the history of the disease is different; and its production appears to be almost entirely dependent upon the exposed condition of parts that are always naturally protected from various injurious impressions by the shelter afforded them within the pelvis. It is going far out of my way to mention the croupous inflammations of the uterus after delivery, and a similar disease, less known but not very rare, attacking the decidua in the early months of pregnancy; and I allude to them merely because they are examples of a closely allied if not identical kind of inflammatory action affecting portions of the genital mucous tract in women.

It is customary for obstetric authors, copying from one another, as they necessarily do, to ascribe the common ulcerations of the cervix uteri and vagina in cases of procidentia, not to exposure generally, and the great changes it necessarily implies in the parts displaced, but to the rubbing of the insides of the thighs upon the vagina, and to the irritation of the surfaces by urine flowing over them. That these latter influences are without any injurious effect I cannot undertake to say, but so far are they from being so manifest causes of evil as to require only to be mentioned, not carefully demonstrated, that it would demand considerable ingenuity to show any connexion between the causes and the effect ascribed to them.

A very little attention to the general history, and especially to the position of the characteristic ulcerations of procident uterus, will convince any one that they are not intertriginous in their nature or origin. Consideration of the same circumstances will easily lead the observer to the conclusion that, if urinous irrigation is the cause, it acts in an obscure way. It is quite possible that this baneful irrigation may induce inflammation and ulceration, even in parts remote from the source of the fluid and from the site of its application; but it is at present impossible to admit that it has a direct influence in producing the affection, when it is remarked

¹ Gazette Médicale de Paris, 1845, p. 374.

² Des Affections, etc., du Col de l'Utérus: These. Paris, 1848.

³ On Uterine and Ovarian Inflammation, 1862, p. 220.

that the ulcerations are not confined to the parts most or perhaps exclusively exposed to the contact of the urine, that parts remote are those generally affected, that the posterior surface of the procident mass, a part protected from the urine, is often the seat of the disease, that it often occurs in patches scattered irregularly over the surface of the exposed uterus and vagina, and, finally, that it is observed in cases where no urinous irrigation at all takes place.

It is important to remark that the increasing size of the procident mass, in the cases under discussion, is often not the consequence of increase in quantity of the prolapsed parts. Increase of quantity goes on to a limited extent, and soon comes to an end in most cases. The increase in size is often the result of hypertrophy of the fallen structures, an increase in whose bulk may be truly enormous. Observation has shown me that this increase of bulk is, to a great extent, the result of inflammation; and the inflammation is frequently diphtheritic in its character, as this paper is intended to prove. It has been often remarked that inflammation of mucous surfaces sometimes induces paralysis of the subjacent muscular tissue; and it has occurred to me that a paralyzed condition of the uterine and vaginal muscular fibres, has a considerable share in the production of the hypertrophy which I have so often noticed to accompany inflammatory affections of prolapsed parts. This paralyzed condition of the vaginal muscular fibres is a very important affection in many cases besides those of procidentia uteri.

Lastly, I may remark, that the microscopic observations in this case contribute special grounds for calling the inflammation peculiarly diphtheritic, and not croupous. Lelut's¹ statement, that membranes of the former nature are produced in or under the epithelial tissue, has been confirmed by Virchow,² who distinguishes diphtheritic membrane produced in the epithelial layer from croupous membrane spread out upon the epithelial surface. The examination of a patch newly formed upon a previously healthy portion of mucous membrane, as related at the commencement of this paper, revealed the presence of abundant epithelial scales upon it. At the same time it must be observed that the existence of an entire epithelial surface beneath the patch shows that the membrane was not formed beneath the entire thickness of the epithelial layer, for it is scarcely to be admitted that a new and healthy looking epithelial surface could have been formed in so few hours under the diphtheritic patch, to replace the old epithelial layer raised upon its surface.

In none of my other microscopic examinations of such diphtheritic membranes were any epithelial scales discovered, a circumstance which may be explained in some instances by the age of the membrane at the time of the examination, and in other instances by the fact of the already almost complete epithelial denudation of the

¹ Archives Générales de Médecine, 1827, p. 351, etc.

² Archiv für Path. Anat. und Physiol., 1847, p. 252.

mucous surfaces at the time at which the new membrane made its appearance upon them.

The observation, during last winter, of the case specially considered in this paper, and of several others of a like kind, has satisfied me :—

1. That diphtheritic inflammation of the mucous surfaces of the female genital organs, when exposed in procidentia, is not uncommon.

Many writers¹ describe deep ulcerations, perforations of the bladder, and gangrenes, of which this kind of inflammation may be the starting point.

2. That the diphtheritic patches may maintain their position and characters for many weeks, and probably for much longer.

The new membrane adheres to the subjacent mucous surface with degrees of tenacity varying at different times. It is often almost impossible to separate it from the portions of uterine mucous membrane that are covered by it, while its attachment to the vaginal mucous membrane is less firm.

3. That diphtheritic patches in this situation are probably sometimes supposed to be ulcerations.

The deception of the observer is easily accounted for by the appearance of the patches, their elevated margins, and the red enclosing line.²

4. That the detachment of such diphtheritic patches takes place in various ways.—

a. A superficial gonorrhœal inflammation may throw off the membrane, and the subjacent mucous tissue be left healthy or superficially abraded.

b. I am inclined to explain appearances observed in several cases, by the gradual desiccation of the membrane and its detachment like an extensive scale or scab. The subjacent, and now exposed mucous membrane, is left entire and healthy, or ulcerated in parts.

c. Replacement of the affected parts, and their retention within the pelvis, produces a slow detachment which I have not carefully observed.

5. That the diphtheritic membrane may gradually become thinner and thinner, while at the same time the subjacent epithelial structure is destroyed. In short, the diphtheritic patch may degenerate into an ulcer. This change may affect an extensive patch, or only parts of it.

¹ Churchill on Diseases of Women, 1857, p. 367.

² This redness, it may be remarked, is mentioned by Bretonneau in observations of analogous membranes in other parts of the body.

ARTICLE III.—*Observations in Clinical Medicine.* By J. WARBURTON BEGBIE, M.D., Physician to the Royal Infirmary.

Malignant Disease of the Œsophagus succeeded by sudden Pericarditis, and ultimately by Pneumo-Pericardium with effusion.

SYSTEMATIC writers on diseases of the heart have, for the most part, acknowledged three different ways in which an accumulation of air in the inflamed pericardial sac may be determined. 1st, Gas may be the direct product of the irritated membrane itself. It is admitted that occasionally air is produced in the cavities of the pleura and peritoneum when these are the seat of inflammatory action, and if so, there can be no reason why the same formation, or pneumatosis should not occur within the pericardium. Dr Stokes has recorded a case of this nature,¹ to which, in connexion with a brief discussion of the physical signs of pneumo-pericardium, I shall again allude.

2d, Gas may result from the decomposition of fluid within the pericardium. Laënnec² and others have not only pointed out the physical signs which indicate this lesion, but—the former more particularly—have in all probability greatly exaggerated the frequency of its occurrence. The effusion of air and fluid into the pericardium was, in the opinion of Laënnec, a phenomenon likely to occur in the last stage of all diseases, and its existence he was wont to determine both by percussion and auscultation. “L'épanchement liquide et aëroforme à la fois du péricarde peut avoir lieu dans l'agonie de toutes les maladies. Il m'est arrivé quelquefois de l'annoncer à une résonnance plus claire du bas du sternum, survenue depuis peu de jours, ou à un bruit de fluctuation déterminé par les battements du cœur et par les inspirations fortes.” In a case recorded by M. Bricheteau,—to which reference will be found in Bouillaud's work (*Traité des Maladies du Cœur*), as well as in a note by Andral to his edition of Laënnec's treatise, and which is also noticed by Dr Stokes and Dr Walshe,—the diagnosis of air as well as fluid existing in the pericardium was made during the life of the patient, chiefly from the presence of a peculiar sound with the heart's action, compared by Bricheteau to that produced by a water-wheel (l'eau agitée par la roue d'un moulin), while on examination after death the pericardium was found occupied by a purulent fluid of very fetid character, air escaping with a whistling sound when the sac was opened.

3d, Gas may reach the pericardium from a distance through perforation, and this again may be the result of direct injury or of disease. Further, in such circumstances the source of the air may be various. A remarkable case is mentioned by Dr Walshe in which a communication was established between the Œsophagus and pericardium, in

¹ Diseases of the Heart and Aorta, page 21.

² Traité de l'Auscultation Médiante.—Du Pneumo-Pericarde.

an attempt to swallow a long blunt instrument, a juggler's knife—the case terminated fatally. The physical signs in this instance, to which I shall refer, were of great interest and clearly established by Dr Walshe.¹ A case of traumatic pneumo-pericardium unattended by inflammation and resulting in complete recovery, is given by Dr Flint, to whom it was related by Dr Knapp of Louisville. The patient was stabbed with a knife which penetrated the pleural cavity and perforated slightly the pericardium.² After the operation of paracentesis pericardii and injection of iodine, physical signs precisely similar to those met with in traumatic cases have been discovered. Such resulted in the memorable instance recorded by M. Aran, under the title, "*Pericardite avec épanchement, traitée avec succès par la ponction et l'injection iodée.*"³ Of communication established between the pericardium and neighbouring organs through the progress of disease, and permitting the entrance of air into the cavity of the former, cases have been already recorded by different writers. Dr Graves, in his *Clinical Medicine*, has furnished a remarkable example of communication by fistulous opening between the stomach and an hepatic abscess on the one hand and the pericardium on the other. Dr M'Dowel exhibited to the Pathological Society of Dublin, the morbid appearances in a case of communication established between a cavity in the left lung and the pericardium.⁴

When the close anatomical relationship of the œsophagus to the pericardium—the former lying in the posterior mediastinum in contiguity with the posterior portion of the pericardium for nearly two inches—is held in remembrance, it will be seen how, in their conditions of disease, likewise, the one is very apt to influence the other. The pressure exerted on the œsophagus by a distended pericardium, may unquestionably determine dysphagia, a symptom of pericarditis, which, though recognised by Testa, has only been duly insisted upon by Dr Stokes, by whom, however, it is regarded as less a mechanical than a vital effect of pericarditis. The case I am now to record is one which illustrates the intimate connexion to which reference has been made,—disease of a cancerous nature, primarily affecting the œsophagus, subsequently involved adjacent organs, in particular giving rise to pericarditis with effusion, and ultimately, by perforation to pneumo-pericardium.

CASE.—Mrs W., æt. 43,⁵ mother of seven children, admitted to Ward XIII., 29th July 1862. She had for several months previously been under the care of Dr Hislop of North Berwick, from whom, at the time of her admission, I

¹ Diseases of the Heart, pages 46 and 271.

² Flint on Diseases of the Heart, page 357.

³ Bulletin de l'Académie de Médecine, Séance du 6 Novembre 1855. See also Trousseau, Clinique Médicale de l'Hôtel Dieu de Paris, vol. i., p. 720.

⁴ For both cases, see also Dr Stokes' work, pages 23, 25.

⁵ Report subsequent to patient's entering the Hospital, furnished by Dr James Grant.

received the following brief account :—" She had been suffering from increasing difficulty in swallowing, at first considered to arise from spasm in the muscles of the œsophagus,—an opinion which was strengthened by the relief she experienced after passing the probang on several occasions. A month or more ago, in attempting to pass the probang much greater difficulty was experienced, and its use was finally desisted from. She suffered much about the same time from vomiting, and once brought up some blood with mucus." Dr Hislop added, "From the pain she feels in the back, the increasing difficulty in deglutition, and the general features of the case, I fear that the morbid deposit is of a malignant character. I have for some time been doing nothing but supporting the system."

State on Admission.—Patient presents an anxious expression of countenance, is very anæmic, without history of hæmorrhage or renal disease. No albuminuria. As far as can be determined the only cause for her present condition is defective alimentation, on account of dysphagia, which coming on gradually, has existed more or less for nearly two years. She has almost constant vomiting, or rather there occurs immediate rejection of the food before it has reached the stomach. Has little or no pain. On careful examination of the chest, no abnormal indication is furnished either by the lungs or heart. Abdominal organs apparently free from disease.

From the time of admission the opinion gradually gained weight, that the patient laboured under malignant disease of the lower portion of the œsophagus.

22d August.—Under a careful regulation of diet some improvement has resulted. The dysphagia and vomiting have greatly abated. *Vespere.*—Has this evening complaint of headache and pain in the chest.

23d.—After the application of a sinapism the pain in the chest was relieved. On auscultation, a distinct to-and-fro pericardial friction sound is audible over the region of the heart. There is no increase of precordial dulness. In the evening the patient fainted, losing consciousness for a very brief period; but on her recovery from the swoon, remaining cold and collapsed in appearance, with almost imperceptible pulse. Brandy was administered, and warmth applied externally.

24th.—Remained very much sunk during the whole night; the surface of body covered with clammy moisture; at times becoming almost pulseless; when perceptible, the pulsations at wrist numbered 120. Brandy and aromatic spirit of ammonia were given freely. She is now—*Noon*—a little stronger, free from pain and without dyspnœa. The friction sound over the heart has lost nothing of its distinctness.

25th.—Has continued in much the same state. The attrition sound with the heart is not quite so distinct, and now there exists a little increase of dulness on percussion, with appearance of slight fulness in the fourth and fifth left intercostal spaces near the sternum.

26th.—More sunk in appearance. Physical signs have undergone no change.

27th and 28th.—In much the same state.

29th.—On auscultation to-day at visit, a very remarkable character of the heart's sounds was noticed. The friction is replaced by a gurgling noise, a *churning splash*, audible over the whole cardiac region, and rendered more distinct when, for an instant, the patient holds her breath. This sound is not distinguishable at a distance from the chest. The dulness on percussion over the heart has vanished, and now a clear and nearly tympanitic note prevails, with increased fulness in precordial region. The patient's extreme weakness forbids any attempt to alter her position in bed; the effect of change of posture on the percussion note cannot therefore be determined.

30th.—Physical signs remain as yesterday.

31st.—Patient died at 9 A.M.

In endeavouring to explain the remarkable physical phenomena connected with the heart, which presented themselves during the closing days of this poor woman's life, I considered it probable

that the pericarditis, of which, on the 23d August, the signs were perfectly distinct, was determined by the progress of the cancerous affection of the œsophagus to the posterior wall of the pericardium; and when, on the 29th, the friction sound over the heart was replaced by the gurgling râle, limited to the cardiac region, and altogether unlike any sound connected with the heart's action previously familiar to me; and when, in addition to the evidence thus afforded, there had occurred an unmistakable alteration in the percussion note over the heart, dulness having yielded to clearness, I concluded that perforation of the œsophagus had taken place, and that, besides the presence of lymph and fluid in the pericardial sac, there was also air. The diagnosis then formed and expressed was as follows:—Cancer, affecting the lower portion of the œsophagus where in contact with the pericardium; pericarditis with effusion from extension of disease in the former; finally, rupture of the œsophagus and passage of gas into the pericardium. The *post-mortem* examination, conducted on 1st September by Dr Haldane, determined the correctness of this opinion in all essential particulars. I subjoin Dr Haldane's report.

“The body was much emaciated: the surface very pale.

“When the chest was opened, the pericardium, marked by the pressure of the ribs, bulged forwards, and on being punctured air escaped. There were no adhesions of the pericardium, but in its cavity were about three ounces of a dark-brown fetid fluid. Both surfaces of the serous membrane were coated with lymph of a yellowish grey colour, of leathery appearance, and evidently of some standing; there was also some softer and more recent lymph, which could be readily scraped off with the nail. When the heart, which was of natural size and structure, was removed, an irregularly circular opening admitting the point of the finger, and communicating with the œsophagus, was found in the posterior wall of the pericardium. On examining the œsophagus, its upper part was found healthy, but the whole of the lower part from about the middle of the thoracic portion was in a cancerous condition; about two inches and a half of its anterior wall was completely gone, and its cavity was here bounded by the back of the pericardium and by the inner margin of each lung. It was here that the pericardium was perforated, and the pleura covering the lungs in this situation was dull and of a brownish colour, but the lungs were not opened into.

“While the liver was being removed, it was found that the back of its left lobe was adherent to the anterior wall of the stomach in a space about the size of half-a-crown. On separating the adhesions, an opening with sloughy margins was found in the stomach, but the firm connexion with the liver had prevented communication with the peritoneum. The whole of the lower part of the œsophagus, the cardiac extremity of the stomach, and the adjoining portion of its anterior wall were cancerous; the cancer was soft and fungating, and in several situations was in a sloughy condition. The intestines were contracted. There was no other lesion.”

I conclude with a very few remarks on the physical signs of Pneumo-hydro-pericarditis. Laënnec, who, as already observed, probably exaggerated the frequency of the occurrence of gas in the pericardial sac, speaks of three signs upon which dependence is to be placed in the diagnosis of air and fluid in the pericardium.

1. Unusual resonance over the lower part of the sternum.
2. Fluc-

tuation sound (*bruit de fluctuation*) audible with the action of the heart and on deep inspiration. 3. As specially relating to the diagnosis of pneumo-pericardium, the circumstance of the heart's sounds being heard at a distance from the chest. Upon this sign Laënnec placed very considerable reliance. He states, indeed, that his observations respecting it were made some time after those already referred to as *one*, and *two*, and that he had not been able to determine whether it existed in connexion with these. Dr Stokes, whose observations on pneumo-pericarditis are most instructive, noticed the fact of the heart's sounds being heard at a distance in the case which he has recorded. He remarks, however, that this sign was not present in either Dr Graves' or Dr M'Dowel's cases already noticed. I have mentioned that it did not occur in the instance now recorded, and Dr Walshe has no doubt correctly observed that Laënnec's expressed conviction, that in almost all cases (for he uses the expression *presque tous les cas*, and not simply *occasionally*) when the heart's action is heard at a distance from the body, the cause of the phenomenon is a temporary development of gas in the pericardium (often readily absorbed, and whose presence does not give rise to any serious result), cannot at the present day be received.¹ In the remarkable case of pneumo-pericarditis related by Dr Stokes, the following signs were observed. I give them in Dr Stokes' own language. "On examination a series of sounds was observable which I had never before met with. It is difficult or impossible to convey in words any idea of the extraordinary phenomena thus presented. They were not the rasping sounds of indurated lymph or the leather creak of Collin, nor those proceeding from pericarditic with valvular murmurs, but a mixture of the various attrition murmurs with a large crepitating and a guggling sound, while to all these phenomena was added a distinct metallic character. In the whole of my experience I never met so extraordinary a combination of sounds. The stomach was not distended by air, and the lung and pleura were unaffected, but the region of the heart gave a tympanitic *bruit de pot fêlé* on percussion, and I could form no conclusion but that the pericardium contained air in addition to an effusion of serum and coagulable lymph."² The phenomena on auscultation and percussion thus recorded will receive farther value as indicating the existence of hydro-pneumo-pericarditis, if in addition there be noticed, as was done by Dr Walshe in the "singular case of traumatic communication between the œsophagus and pericardium," referred to in his work on Diseases of the Heart,³ a dull or tympanitic sound elicited over the precordial region according to the position assumed by the patient. The extreme weakness of the patient in the instance I have recorded alone prevented our determination of the existence of this important sign: from the appearances presented after death, I have little doubt that, had it been in our power to alter the

¹ Diseases of the Heart, p. 269.² Ibid., p. 22.³ P. 46.

patient's position after the development of the peculiar auscultatory phenomena, we should have had this last indication also to guide us. Without it, however, and in default of a metallic character of the cardiac sounds, as noticed by Dr Stokes, the diagnosis of pneumo-pericarditis with effusion may I think be made, from observing a gurgling or churning splash sound with the heart's action limited to the cardiac region, with which more or less of tympanitic precordial resonance is associated. Still more reliable as signs will these phenomena be, if, as in the instance now recorded, the gurgling has succeeded, after its continuance for a few days, a distinct friction sound, and the tympanitic replaced a dull percussion note.

ARTICLE IV.—*On Delirium Tremens and its Treatment.* By
WILLIAM PIRRIE, Jun., M.D., Aberdeen.

THE grand indispensables for the rational and successful treatment of any disease are, a certain diagnostic tact, sound pathological views, a proper knowledge of the natural course of the disease, and an accurate understanding of the physiological actions of the remedies with which we intend to combat it. The more we review the state of medicine at the present day, and the more we reflect on our own conduct, the more reason do we find to fear that we are apt to follow too exclusively certain methods of investigating disease, and to neglect or undervalue others which may be equally indispensable for attaining sound principles, and framing rational rules of practice.

In perusing the early records of medicine, we cannot but admire the astuteness of the fathers of our art in many points, and the accuracy of their observations and descriptions of the symptoms or outward manifestations of the majority of the diseases which are constantly occurring in practice; but we are at the same time most convincingly taught how utterly inadequate the most familiar acquaintance with outward symptoms is for the attainment of correct or even sensible, notions of the real nature and causes of disease, and how utterly impossible it is, with this amount of knowledge, to frame rational plans of treatment. Accurate diagnoses of many diseases were doubtless made from repeated observation of particular series of symptoms, but the prevalent opinions as to the nature or essential causes of the majority of complaints were mere conjectures, or the wild speculations of inventive minds; and the treatment pursued was, in consequence, vague, pointless, and empirical, or directed against symptoms instead of their causes. Accordingly, although we have good reason to say that much valuable information has been handed down from these early ages, still we must confess that the recorded treatment of most diseases in these early days is of a nature utterly unworthy of imitation, and in

many cases so thoroughly irrational, as to be undeserving of a minute's consideration.

In tracing the history of medicine through successive ages, we can easily account for the currency of empiricism in the treatment of disease, so long as men were ignorant of anatomy sound and morbid, and had the crudest notions of the functions of the various organs, and but a very imperfect knowledge of the nature and actions of their adopted remedies from the want of chemical and physiological investigations. When we come down through a long series of centuries, and mark the gradual advance of knowledge till we arrive at our own times, we might reasonably expect that, with this vast accumulation of valuable information, and with our great facilities for arriving at a true knowledge of the nature of diseases, we should have made commensurate advances towards the establishment of rational and uniform rules of practice. When we consider that the study of anatomy and the cultivation of pathology have rendered subject of demonstration what was formerly never thought of, or at most was matter of mere conjecture; when we bear in mind the wonderful increase of our physiological knowledge, and the all-important discoveries consequent on the application of chemistry, microscopy, and other collateral sciences, to the study of medicine; we should naturally conclude that, with our great advances in many departments, with the valuable accumulation of facts culled from the records of antiquity, with our extended list of therapeutic agents, and our more extensive and accurate knowledge of their physiological actions, with our searching investigations in the study of disease, and with the advance of general knowledge, the domain of empiricism would have become very circumscribed, and the grand end of all medical inquiry been attained,—the treatment of disease conducted on fixed, uniform, and rational principles. On a careful survey of the present state of the science and art of medicine, we may with good reason feel proud of the light which now shines on subjects which for ages were enveloped in darkness, and we may congratulate ourselves on the progress which has been made in various directions, and which we would fain hope is but the prelude to the discovery of more powerful weapons than we yet possess for grappling with disease; but still we must allow that in our therapeutics we are too often without fixed rules of action, that the use of remedies in many diseases is not reduced to any rational standard, and that we are far from having accomplished the abolition of multifarious, irreconcilable, conflicting, empirical methods of cure, and from having attained the establishment of definite, rational, and uniform methods of procedure in the treatment of disease. That such is really the case, we need only adduce the great diversity of opinion at the present time as to the proper treatment of inflammation,—the origin, concomitant, or result of almost every disease to which the frame is liable,—and the prevalence of numerous and most opposed methods of treating particular disorders.

These statements are strikingly illustrated in the case of delirium tremens,—the treatment of which has of late attracted much attention, and called forth numerous communications in the various medical journals. Many and most dissimilar methods of treatment have been strongly advocated and illustrated by numerous cases, the favourable issues of which seemed fairly referable to the plan pursued. I venture to make a few remarks on this disorder, with a view to the determination of its proper treatment, both because it has of late been frequently discussed, and because I have very great difficulty in reconciling the popular methods of treatment with sound principles and rational practice. As these difficulties may have been felt by others, I do not hesitate to make them known, in the hope that those who enjoy frequent opportunities of studying the disorder, and whose attention may be more particularly directed to its treatment, may take them into consideration.

But before entering on the consideration of this particular malady, I would briefly revert to one of the qualifications which I stated at the outset of my remarks was indispensable for the framing of rational methods of treatment, namely, a thorough knowledge of the natural course of diseases, a proper acquaintance with their ordinary features and with their usual duration and results when uninfluenced by the interference of art. Before we can arrive at any just or accurate appreciation of the special value of any medicine or remedial measure in disease, we must have a previous knowledge of the virulence of the malady, of its ordinary course, duration, and issue, and of the degree of natural tendency in it towards recovery or death. Now, I very much fear that we are too prone to under-rate the importance of this kind of knowledge, and to consider skill in diagnosis, sound pathological views, and a familiarity with the properties and actions of drugs, sufficient for the proper management of disease. There is much reason to suspect that many of our predecessors, notwithstanding their numerous disadvantages and manifold imperfections, had in many instances a more precise knowledge of the natural course of the diseases that came under their notice than many at the present day possess; and we much fear that the want of this particular kind of information is a fruitful cause of the diverse methods which have been followed, and of the hosts of dissimilar remedies which have been strongly advocated in the treatment of diseases whose pathology we understand, and the diagnosis of which we can make without any difficulty. The importance of a proper knowledge of the pathology of diseases can never be overrated, for without it treatment could never rise above mere combating with symptoms; but however accurate we may be in our diagnosis and pathology, and however familiar we may be with the properties of the medicines we employ, still, unless we are also familiar with the natural course of diseases, we can never be in a position to adopt a rational plan of treatment, can have no security for our rationally withholding or administering medicines,

and can have no safeguard against the too common error of hastily attributing to art what is really due to nature. The truth of this argument is in no way invalidated by the fact that diseases often have favourable issues under the conduct of those who never make themselves properly acquainted with their natural course; for it becomes a question for serious consideration how often diseases decline independently, or we might almost say in spite of art, and how often their natural severity and duration are diminished by treatment. The more we study disease and watch its natural course and tendency, the more plainly we see that the great duties of the physician in undertaking its treatment are, to avoid all undue interference and all over-treating,—to further the natural process of cure,—to attack and remove all complications and obstacles which may arise to interrupt this process,—and to obviate the tendency observed to death. We have good reason to fear that they are but the few who willingly embrace all the opinions of Sir John Forbes; still, if we contrast the prevailing treatment of disease in our day with that pursued only thirty or forty years ago, we see that men are, it may be unconsciously, trusting more to the curative powers of nature now than formerly, and that much less medicine is now expended in its treatment than in bygone years. More careful observation of the natural course of disease will, I feel sure, more and more convince us that nature has long been denied much that was her due; that her curative powers are much greater than we have been willing to admit; and that many of those medicines which have long been reputed “essentials,” “specifics,” and “sheet-anchors,” in the management of particular disorders, are not so indispensable as we have been wont to consider them.

To turn, however, from these reflections, and to enter on the subject of delirium tremens, we may at the outset observe that the fact of so many and such dissimilar remedies having been highly praised and illustrated by numerous cases whose favourable issues seemed justly referable to their employment, is a clear indication that its treatment must often have been open to the charge of empiricism, and that the complaint must have a strong natural tendency towards recovery. I propose now to enumerate and briefly describe the various methods of treatment which have been proposed and adopted in delirium tremens, and to inquire how far they are really entitled to be called rational methods of cure. But before we can arrive at a proper determination of this point, we must consider the nature of the symptoms characterizing the disease, the nature of the poison to which they are due, and the properties and physiological actions of the medicines employed to counteract its deleterious effects. From a consideration of the whole subject, we may be able to frame certain rules of conduct not unworthy of a little notice. If at any time my remarks appear dogmatical in tone, it is because as great brevity as is compatible with clearness of exposition is specially aimed at. The whole is written in the true spirit of inquiry and not of controversy.

Complete sleeplessness, busy, chattering, anxious delirium, and general muscular tremors are the three grand distinguishing features of delirium tremens. Impairment of the intellectual faculties, perversion of the senses, and loss of voluntary control, are prominent symptoms in a well-marked example of the disease. The sufferer cannot fix his attention on any subject, even for an instant; his mind is constantly wandering, and can be recalled to reason only for a moment. His thoughts are ever wandering, and his mind is filled with fancies which are usually of a nature to excite suspicion, despondency, and terror. He is seeing some person who is evil disposed towards him, or he is pursued by some loathsome animal, or the impression that some grievous calamity is impending over him, agitates his mind and depresses his spirits. His manner in consequence is abrupt, hurried, and timid,—he is generally easily satisfied and managed, if gently treated—and there is more danger in most cases of his doing injury to himself, than of his showing violence to another. All these symptoms continue without any decided change for a period varying from two to four, or it may be even five days; after which they usually subside on the occurrence of sleep which is generally prolonged and very sound. But although distressing sleeplessness is a marked feature of this complaint, still we must carefully remember, in order to avoid all incorrect inferences after the giving of medicines, that the sufferer may at any time become quieter and fall into a sort of broken, disturbed slumber, for periods of from fifteen to forty or fifty minutes; and I have frequently observed that there is a distinct aggravation of the other symptoms, and much less tendency to these brief and unrefreshing slumbers towards evening, than during the earlier part of the day. With all this, the face is pale and expressive of fear, the tongue is moist and creamy, the eyes are wild and startled and generally without any great conjunctival suffusion, the secretions are generally diminished, with the exception of the perspiration, which is usually very copious, the appetite is greatly diminished or almost entirely gone, the pulse is soft, frequent, and varying in size in different cases, and the cardiac impulse is frequent and feeble. The urine is scanty and high coloured, and according to Dr Bence Jones, contains a smaller amount of the phosphates than is found in cases of phrenitis; and in many instances, according to Dr Peddie and others, it contains a greater or less amount of albumen. The state of the heart and the condition of the renal organs should be carefully ascertained in every case, as the presence of organic disease in these organs has an important bearing on the subject of treatment. The general tendency of the complaint is towards recovery, but convulsions and coma are not unfrequent accidents of the disease. The question now comes to be, What is the cause of all these morbid phenomena, and how does it operate on the system? Before entering on this subject, it is necessary to have a correct understanding of the distinctive

peculiarities of the three classes of neurotic medicines,—stimulants, narcotics, and sedatives,—in order that we may be able to assign to alcohol its proper place in our classification of therapeutic remedies from the effects we find it produce, and to judge accurately of the appropriateness of medicines employed to counteract its injurious effects.

Stimulants are medicines which pass by absorption into the blood, and are carried by it to the nerves and nervous centres, on which they exercise a marked influence. They exalt nervous force, and increase the energy of the entire nervous system, or of particular portions of it. Some maintain that they merely call out or elicit the nervous energy inherent in the system at the time of their administration, and that they have no power to generate any in addition; but, as Dr Headland says, "If this were the case, then the reaction or subsequent failure of nervous power, ought to be exactly equivalent to the first temporary increase of that power, assuming this increase to have been simply abstracted from the natural resources. But we do not find it to be so." Stimulants invigorate the circulation, but do not, in general, exert any influence on the intellectual faculties, being limited in their operation to simple stimulation of the organic and merely animal functions of the brain, and of the sympathetic nerve throughout the system.

The members of the second class of neurotic medicines to which the name of narcotics is given, at times closely resemble stimulants in their primary effects on the system, when given in small amount. After conveyance to the nerves and nervous centres, they at times produce a transient exhilaration, or a very temporary increase of nervous force; but at other times their primary influence is very different,—an apparently immediate depression of the energy of the entire nervous system, or of some particular portion of it taking place. This immediately depressing effect produced by some of the narcotics, forms a striking analogy between them and the next class we are about to mention; but, however much they may at times, from their primary effects, resemble stimulants, and at other times sedatives, they differ essentially from either of them in exerting a marked influence over the functions of the mind. All narcotics, when taken beyond certain limits, either pervert or altogether drown the intellectual faculties. Some of them, when taken very sparingly, may give a very transient impetus to some of the functions of the mind; but all of them, when taken above a certain amount, either impair, extinguish, or lead astray and pervert the mental powers. They all, moreover, more or less destroy the supremacy and natural directing influence of the will, blunt or otherwise derange the senses, and depress the moral emotions. When given in poisonous doses, death ensues in the way of coma.

Sedatives, on the other hand, exert no marked influence on the intellectual powers, and in this respect differ very distinctly from narcotics. The distinction between them and stimulants is equally

well marked: for whereas the latter, to a greater or less degree, excite, call forth, or, it may be, generate nervous force, the former, from the first, invariably depress it. But besides leaving the mental functions untouched, when an over-dose has been taken, they differ from narcotics in causing death by syncope, or suspension of the action of the heart, instead of by coma. It is true, as will be mentioned in the case of alcohol, that some narcotics may, when taken in immense quantities at a single draught, induce death by shock, but still their usual method of extinguishing life, when allowed time to exert their specific effects on the system, is by causing the supervention of coma.

Alcohol, the active principle of all intoxicating drinks, has numerous properties, and produces various changes in the tissues, which it is foreign to our present purpose to enlarge on. It has, as most persons are aware, irritant and astringent properties, but it has another property which many are ignorant of, and which most who do know are very unwilling to admit, or, at least, to act as if they believed. Many consider that alcohol is properly arranged in the class of stimulants. This is, doubtless, so far correct, but it is also inaccurate, inasmuch as it is only by its primary and transient effects on the system that it deserves that place. If we observe its effects when taken in large or frequently repeated doses, we find that, though it at first enlivens the mind, and arouses the nervous energy, it afterwards produces decided depression, perverts or overpowers the mental faculties, and, if continued to be taken, induces coma and death. It is a narcotic poison, and it is placed by Dr Headland amongst the inebriant narcotics, of which he says,—"The medicines of this order, taking alcohol as the type, approach more nearly to stimulants than any other narcotics. When given in small doses, their narcotic operation can hardly be perceived. They are then exhilarants, slightly quickening the pulse, and enlivening the mental faculties. When given in large doses, this stimulating action on the heart and mental powers occurs first, and is now more intense; but it is soon succeeded by disturbance and impairment of the intellectual faculties." That alcohol has this power, and that it really is a powerful inebriant narcotic poison, a cursory review of the various phenomena induced by the continued drinking of any intoxicating liquor will at once convince us.

When a man sits down and leisurely partakes of any alcoholic drink, he feels that for a little his thoughts are more rapid and more varied than before, that his ideas come faster, that he has a greater flow of words, and a greater inclination to speak, that his memory, it may be, is sharpened, and his powers of perception increased. The temperature of his body sensibly rises, the pulse beats faster, and the vigour of the circulation is increased. But if the drinking be continued, the pleasurable feelings and the transient stimulation of the mental powers speedily give place to confusion of thought, gradually increasing inability to express the

ideas, loss of reason, indifference to external objects, inability to form correct impressions of objects, and loss of both mental and bodily control. If the man still goes on to drink after reaching this stage, which constitutes the state of intoxication, we find that, however wild and noisy his manner may previously have been, it now becomes quieter, and that he himself becomes gradually more and more lifeless, and, as it were, weighed down and overpowered. Reason has now completely lost its sway,—the previously exalted imagination has given place to cessation of all ideas, and to complete mental torpor; the will is in perfect abeyance; the powers and uses of the senses are destroyed; all muscular power is lost, and the man lies utterly insensible to all impressions, and unconscious of all around him. The man is, as has been aptly styled, “dead drunk;” and if we examine him more closely when in this helpless state, we find that the pulse is laboured, that the heart beats feebly, that the function of the lungs is more or less seriously interfered with, and that the breathing is in consequence more or less oppressed. If happily the system is able to bear up until the poison is got rid of, the powers of the mind and the organs of the body gradually return to their wonted state; but if the amount of intoxicating liquor consumed has been too much for the system to recover from, the previous insensibility and lifelessness become more and more confirmed, the heart beats more and more faintly, the pulse becomes more laboured, the breathing turns slow, deep, and noisy, the face becomes swollen and more or less dusky in hue, and the body generally falls in temperature. The nervous centres are paralyzed, the function of the lungs becomes impeded, the proper aëration of the blood is rendered impossible, and death is brought on in the way of coma. All this clearly shows that alcohol is a narcotic poison, and that it may with much propriety be called an “Inebriant Narcotic.”

If any further support to the opinion expressed is required, I would observe that Dr Christison, our greatest authority on poisons, writes,—“The sedative action of alcohol on the brain constitutes it a powerful narcotic poison.” It is doubtless true that alcohol may cause death much more speedily and in a different way from that just described. If an enormous quantity of any of our most intoxicating liquors, such as brandy or whisky, be taken at a single draught, the nervous centres become at once overpowered, the heart ceases to beat, and death takes place by shock. This, however, in no way enfeebles my previous argument; it simply proves that alcohol may cause death in more ways than one, the exact form being dependent very much on the rapidity and quantity in which it is admitted into the system.

Delirium tremens, a not unusual effect of the poison, is a condition arising from the prolonged but more leisurely indulgence in alcoholic drinks than can cause immediate death by shock. The nervous system, though not at once overpowered, is gradually enfeebled; the

cerebral functions are more or less perverted; and, at length, a paroxysm occurs which is characterized by the symptoms already described, and which, when fatal, generally causes death by asthenia. The duration of each debauch, and the intervals of sobriety have been such as to prevent the accumulation in the system of an amount of alcohol sufficient to maintain a state of dangerous coma. But we must always carefully bear in mind that delirium tremens is a disorder associated with that peculiar state of the nervous system, and with such a condition of the blood, that we can never be sure in any instance that coma may not supervene and put an end to the sufferer's life. This mode of death in delirium tremens is often the result of organic visceral disease, hurried on to a fatal termination by the presence of alcohol in the system; but we are here confining our attention to the immediate effects of the poison itself.

We must now consider how alcohol operates in the induction of delirium tremens. The first question is, are there any anatomical changes discoverable on inspection after death by which we could account for the symptoms, and by attacking which we might hope to remove the disorder? It is extremely rarely that an opportunity presents itself for examining an uncomplicated case of delirium tremens: for, as already said, it is a complaint which very rarely terminates fatally, unless it be complicated with organic visceral disease. Dr Abercrombie considered it as "a dangerous form of meningitis;" Dr Bright classes it amongst his cases of "arachnitis;" and Craigie, Frank, and others, seem to have entertained a similar opinion as to the nature of the disorder. But in those rare opportunities which have occurred of inspecting the head in unmixed examples of the complaint, nothing has been detected which unequivocally proved the disorder to be symptomatic of a peculiar modification of meningitis. A slight amount of opacity of the arachnoid membrane, and a slight fulness of the vessels of the pia mater, with a small amount of serum in the cerebral ventricles, have undoubtedly been seen at times, but these were never so pronounced as to indicate bygone inflammation; and, besides, we must remember that these same changes are often found in those who have been intemperate, but who have never suffered from an attack of delirium tremens. The most careful scrutiny of the brain and nervous system has detected no change which could with any degree of propriety be considered an efficient cause of the peculiar train of symptoms characterizing the disorder. In most cases, however, there is found old standing disease,—serious organic changes in the liver, lungs, heart, or kidneys; but as these visceral diseases are very common, and are not associated with the peculiar symptoms of delirium tremens, they cannot of course be considered as the cause of the singular nervous disturbance constituting delirium tremens. The most careful inspection of the brain and its membranes gives us no real light on the nature of the disease, but it

teaches us that when delirium tremens is fatal, it is generally in consequence of textural changes in important organs,—a healthy condition of which is necessary for the continuance of life, and more especially for the favourable termination of any intercurrent disorder. We are also convincingly taught that the mere inspection of the brain by our unaided senses is, if exclusively adopted, an altogether hopeless method of arriving at a true knowledge of the nature of the disorder. We are therefore compelled to try other modes of arriving at a solution of the question.

We are still, it must be confessed, far from possessing a certain knowledge of the particular way in which alcohol operates in the induction of delirium tremens, but analytical chemistry and experimental physiology have of late given valuable additions to our knowledge of the actions of alcohol on the tissues, of its degrees of affinity for different textures and organs, and of the manner in which it affects the circulating fluid; and we would fain hope that the time is not far off, when, by a further prosecution of these modes of investigation, the pathology of the complaint will be more exactly understood, and its proper treatment be the subject of greater unanimity of opinion.

I shall now proceed to the consideration of the known effects of alcohol on the solids and fluids, as a proper knowledge of them will prepare us for the better understanding of the pathology of delirium tremens, and will be found to have an important bearing on the subject of treatment. It is an incontrovertible fact, indisputably proved by numerous most conclusive experiments, that alcohol has, like other poisons, an undoubted preference for one class of tissues, and a special proneness to attack one organ in the body above all others. Drs Cook, Macpherson, Ogston, and others, bear witness to having discovered notable quantities of alcohol in the ventricles or the substance of the brain; and the experiments of Dr Percy, which have frequently been repeated and corroborated by other eminent physiologists, clearly prove that nervous tissue has a special attraction for alcohol, and a great power of condensing it into its substance; and that the brain, above all other organs, is most rapidly and most frequently attacked by the poison. Dr Percy injected into the stomach of a dog a quantity of alcohol sufficient to cause almost immediate death. With as little delay as possible, he removed the brain, and placed it in an apparatus for distillation. By this process he extracted from the brain a considerable quantity of alcohol, and, what is very remarkable, more than he could obtain from an equal weight of any other part of the body, or from an equal weight of blood. The opinion of Dr Percy that some particular affinity exists between brain matter and "spirit," was afterwards advocated by Dr Carpenter in his treatise "On the Use and Abuse of Alcoholic Liquors in Health and Disease." In referring to this point he says,—"The alcohol being thus specially drawn out of the circulating current by the nervous matter, is

incorporated with its substance in such a manner as even to change (when in sufficient amount) its physical as well as its chemical properties. It is important also to observe that this affinity is obviously such as will occasion the continual presence of alcohol in the blood, even in very minute proportion, to modify the nutrition of the nervous substance more than that of any other tissue: for the alcohol will seek out (as it were) the nervous matter, and will fasten upon it, just as we see that other poisons, whose results become more obvious to our senses (although the poisons themselves may exist in such minute amount as not to be detectible by the most refined analysis), will localize themselves in particular organs, or even in particular spots of the same organ." With reference to the specific action of alcohol, Dr Peddie remarks,—“If there is one disease more than another arising from habitual excessive alcoholic drinks, in which a peculiar toxicological effect is manifested, it is delirium tremens.” He also observes that, “like plumbism, mercurialism, ergotism, or narcotism, alcoholism is manifestly specific in its nature.” Recent experiments, both in this country and in France, by means of a delicate chemical test—bichromate of potash and sulphuric acid—convincingly prove that alcohol is a poison to the blood and to various organs, but more particularly to the brain.

We do not need any nice and difficult experiments to convince us that the poison reaches the brain with extreme rapidity, for we have, unfortunately, too frequent opportunities of establishing the truth of the proposition by observation of the speedy appearance of its effects on the minds of those who give themselves up to the use of intoxicating drinks. Being satisfied that alcohol has a special attraction for nervous tissue, and for the brain above all other organs, it becomes an interesting question to inquire how alcohol acts on the nervous centres,—in what mode it produces its effects,—or rather, through what channels it operates on these nervous centres?

Since the time that the opinions entertained on the nature of the disease by Abercrombie, Bright, and the other authorities we have already named, lost their popularity, the theory which has met with the most general acceptance is that proposed by Dr Watson. According to this great authority, the disease “consists in nervous irritation,—nervous exhaustion goes along with and augments the nervous irritability.” Although it is undoubtedly true that the nervous system in this complaint is in an irritated and exhausted state, still this is no more than the mere expression of a truth, and contains no answer to the question, “how alcohol induces this state and occasions the peculiar and characteristic signs of the disease.” Numerous experiments have been performed, with a view to throw some light on the mode of action of alcohol on the nervous centres. The many experiments performed for determining this point, have led to the three following opinions, each of which has met with a goodly number of supporters.

1st, Some believe that the influence of alcohol is conveyed to the

brain through the nerves only. Perrin, Duroy, and Lallemand have come to the conclusion that alcohol acts primarily and directly on the nervous system.

2*d*, Others maintain that it acts primarily on the blood; that it is first absorbed, and that it does not manifest its effects on the brain, until it has come into contact with that organ by the circulation.

3*d*, Others believe that it produces its effects on the nervous centres through both these channels,—that its influence at times reaches them through the nerves only, and that at others it first passes into the current of the circulation, and by it is brought into contact with them.

Dr Marcet,¹ in a series of papers entitled “An Experimental Inquiry into the Action of Alcohol on the Nervous System,” records numerous experiments on frogs and dogs, which appear to me to be very conclusive, and which led him to believe that the influence of alcohol on the nervous centres is transmitted through both the channels already mentioned. Dr Marcet performed three different sets of experiments. He first observed the effect of alcohol on the frog and the dog in a state of health; in a second series of experiments on the frogs, he allowed the circulation to remain undisturbed, but cut through the nerves distributed to the parts which he placed in contact with the alcohol; whilst, in a third set of experiments on frogs and dogs, he arrested the circulation, but carefully avoided injuring the nerves of the parts to which he applied the alcohol. The conclusions to which he came from these experiments were, that alcohol acts on the nervous centres chiefly by absorption; but that it also exerts a slight but decided influence on the nervous centres through the nerves, without the aid of the circulation. What the exact nature of the influence is which is transmitted along the nerves to the nervous centres, we do not know. Whether it is, as has been suggested, of the nature of shock we cannot say, or whether it consists in peculiar molecular changes, chemical decompositions, or chemico-vital changes, we are not prepared to decide; but it is strange to observe how the influence transmitted through the nerves varies at different times, and in different persons, from causes which, we fear, are beyond our powers of discovery. Whether owing to natural constitution, or to accidental causes operating at the time, the fact is indisputable that different portions of the nervous system possess varying degrees of susceptibility to the influence of alcohol. Two men consume equal quantities of the same intoxicating liquor, and one of them is affected with marked sensorial disturbance with little or no impairment of the powers of locomotion; whilst, in the case of the other, the mental powers remain so intact that you never suspect intoxication until, on attempts at walking, the staggering gait reveals that the poison has done its work. Are these different manifestations owing to an influence transmitted through the nerves

¹ Med. Times and Gazette, March 1860.

independently of the circulation, or are they the consequence of changes, to be afterwards described, induced in the blood by the continued presence of alcohol, causing various degrees of disturbance in different portions of the nervous mass, and dependent on variations in the rapidity with which the nutritive changes are going on?

Those who deny to alcohol a specific toxæmic influence, and consider delirium tremens to be the result of irritation and exhaustion of the nervous system from excessive stimulation, do not require to prosecute more minute investigations as to the *modus operandi* of alcohol in the induction of that peculiar state, inasmuch as they consider the continued use of alcoholic drinks to be the predisposing cause, and the sudden withdrawal of them the immediate exciting cause of the disorder. Moreover, those who hold this view, generally entertain the belief that an exactly similar condition to the delirium tremens à potu results from the abuse and sudden stoppage of other substances, as opium and tobacco; and that it is a frequent consequence of excessive mental effort, of prolonged and violent emotional excitement, and of violent injuries or serious operations in persons accustomed to the use of stimulants.

My own experience and observation have produced, in my mind, the firm conviction that the paroxysm is not owing to the sudden withdrawal of the accustomed stimulus: for I have always found it to be the direct result of a violent fit of drinking, or of long-continued, steady "tippling," and not of any refrainment from intoxicating drink. It is usual to describe two separate and distinct forms of delirium tremens,—viz., delirium è potu or delirium ebrietatis, an acute alcoholism, the immediate consequence of a debauch and of the presence of drink in the system; and delirium ebriosorum, or the delirium of drunkards who habitually indulge to a large extent, but not to such a degree at any time as to unfit them for the particular duties of their calling. This second form is usually observed to occur after sickness or change of regimen, and is said to be the immediate consequence of the suspension of the accustomed stimulus. Now I think that these cases may be satisfactorily accounted for without attributing them to deprivation of the ordinary stimulus, and that they admit of the same explanation as the cases of "traumatic" delirium following bodily injuries or surgical operations, to which we will presently refer. But I think that the theory of privation or suspension of the stimulus being the exciting cause of the paroxysm, is confuted by actual facts. If it be true that delirium tremens occurs in persons who have not been drinking for some short time, it is equally true that numerous drunkards cease from their evil habit, and become sober men without suffering in any degree from the disorder. Now, if the suspension of the ordinary stimulus were the real exciting cause of the affection, it ought to operate equally powerfully in both instances. The theory is also negatived by the experience of many who have had the opportunity of watching the effect of suddenly

withdrawing alcoholic liquors from those long accustomed to excessive indulgence in them. "To me," writes Dr Peddie, "it is apparent that habitual excess in the use of stimulants is alike the exciting and the predisposing cause of delirium tremens, and that if a suspension or diminution of habitual supplies be at any time attended by symptoms of the disease, these are not to be regarded as resulting from change in the quantity consumed, but as occurring in spite of such change. The error is a popular one, and has arisen from imperfect inquiry into the history of individual cases and incorrect observation regarding the circumstances connected with the supposed reduction or abstraction. When called to see a case of delirium tremens, on inquiring as to the habits of the patient, we are frequently informed by his friends that for a long time large quantities of spirits, or wine, or malt, or all of them, and perhaps in addition morphia or opium, had been systematically consumed, but that for some time (a few weeks perhaps) much less had been taken, and within the last few days little or none; and then the inference is drawn for us that the unfortunate patient has actually brought on the attack by meritorious efforts to free himself of a habit of which he had begun to be ashamed. Now all this is very plausible, but not in accordance with the strict facts of the case, as the individual himself, if put on his word of honour, will probably confess. The statement ought to be that he was formerly in the habit of consuming large quantities of his favourite stimulant, until he found that a much less dose began to affect the system, that then he reduced the amount still further, but experienced an equal if not greater constitutional effect therefrom, and thus, from day to day, reduction was forced on him from his own sensations of gastric irritation, nervous excitement, and muscular debility,—these feelings having been, in fact, neither more nor less than the premonitory symptoms of the attack of delirium tremens, and just what might have been expected if, as I have ventured to assert, the alcoholic principle is to be viewed as a cumulative poison."

Those who reject the opinion that delirium tremens is a specific toxæmia from alcoholism, and consider it as mere nervous irritation and exhaustion consequent on the sudden want of a favourite stimulus, look upon the delirium cum tremore (or, as it is also called, the "symptomatic" or "traumatic" delirium), which often follows serious accidents or severe surgical operations, as identical, both as regards its symptoms and its exciting cause, with the delirium *è potu*, and adduce it as a powerful support to the theory they entertain. They attribute the occurrence of the disorder under these circumstances to the sudden abstinence enforced in the treatment, or to the want of the influence of the habitual stimulus either from the system being unable to receive or retain it, or being in some way so modified that it will not yield to its power. This opinion has received the countenance and support of many great authorities. Thus, Dr Watson observes, "it is a very common result of bodily

injuries, and accidents, and surgical operations, or, I should rather say, that it often follows such diseases and casualties; for it is even then, the consequence of the treatment and regimen to which the patients are subjected, rather than of the surgical or medical complaint. And it is certainly more apt to occur under these circumstances in old people, and in those who, being younger, are known to have been intemperate." Dr Wood also writes, "The occurrence of an accidental injury, or of a violent disease, is apt to be the exciting cause of the delirium, by interrupting the use of the stimulant, causing its rejection by the stomach, or rendering the system for a time insusceptible to its influence." There are two opinions regarding the nature of this "traumatic" delirium, entertained by those who regard delirium tremens to be a specific toxæmia from alcoholism; but there is unanimity of opinion regarding the cause of the immediate outburst of the affection. Some consider that the peculiar disorder often following accidents and operations is really delirium tremens, a specific disease, hurried on by the shock to the system, and slightly modified in its course by the additional accidental disturbance; whilst others believe that the peculiar state often occurring under these circumstances, although it has many points of resemblance to delirium tremens, has at the same time characters sufficiently marked for its being regarded as really not the same disorder. "There is," says Dr Peddie, "in the habitual drinker of a nervous temperament, a tendency to delirium tremens," and "it is in this irritable state of the habitual drunkard's constitution, although he may not be on the verge of delirium tremens, that alcohol, from its presence in the blood—in whatever way combined—and its interference with the nutrition of the brain and nervous system, will superinduce, on the receipt of an injury—say a gunshot wound or a fracture—a delirium presenting somewhat of the appearance of that disease, but which in reality has more of a typhoid character." He further adds "it is not identical with delirium tremens, although some writers have considered it as such."

Although there may be a little difference of opinion as to the exact identity of the delirium tremens *à potu* and the "traumatic" delirium of Dupuytren, amongst those who consider the former disease to be a specific toxæmia, still there is but one opinion as to the immediate cause of the seizure after accidents and serious diseases. All agree that it is the shock to the system which causes the immediate outbreak, and not the sudden refrainment from stimulants enjoined in the treatment to which the sufferers are subjected, or rendered unavoidable from their particular condition at the time. The shock, operating on a system already greatly disordered by the abuse of ardent spirits, causes a more speedy manifestation of the disorder than would have been the case had no injury been sustained. The system in the habitual drinker is always tending towards a paroxysm, which, however, requires a

certain continuance in intemperate habits for its due manifestation. The shock, by the additional disturbance it causes to the nervous system, renders the system unable any longer to withstand the fit; matters are brought to a height, and a paroxysm of delirium tremens ensues. Now I think that a great many cases of the so-called delirium ebriosorum admit of the same explanation. A man has for years been a confirmed drinker, yet seldom or never so drunk as to unfit him for work. More or less alcohol is always in the system, which in consequence has become very "shaky;" but so long as no additional disturbance of the nervous system occurs, the habitual drinker, although perhaps for long on the brink of an attack, yet never suffers from a decided paroxysm of delirium tremens. By and by, however, he suffers from some disease, it may be slight; or he is put under some restraint, or suffers some disgrace, which, from affecting his position and character, causes him considerable annoyance and anxiety. For a little nothing unusual happens, but after a day or two the man becomes more shaky and disturbed in mind, and at last falls into an attack of delirium tremens, which is hastily attributed to the sudden change from habitual intemperance to complete abstinence. But I think we may with reason consider the mental agitation and nervous trepidation, caused by the bodily disorder or the punishment or disgrace incurred by the drunkard, as the immediate cause of the outburst, just as the more decided shock consequent on accidents or severe operations. The only difference between the two classes of cases in my opinion is, that in the one class the system is more completely alcoholized, and consequently requires less additional disturbance of the nervous system to hurry on a paroxysm than is required for the same end in the other.

Some, as I have already hinted, assert that a state exactly similar to delirium tremens follows the abuse and sudden suspension of other substances, as for instance opium and tobacco; whilst others believe that the statement is founded on imperfect observation, and partial acquaintance with the previous history of such cases. I have never myself seen a state identical with delirium tremens follow the abuse or sudden withdrawal of opium, tobacco, chloroform, or Indian hemp, although I have seen all these substances largely consumed, and have had opportunities of observing the effects of sudden cessation from their use. I have seen opium and Indian hemp consumed to an inordinate extent by the natives of India, but I never saw a state exactly similar to delirium tremens result either from their abuse, or from refrainment from them. The nearest approach which I ever saw to it was amongst the European troops engaged in the suppression of the mutiny in Central India in 1858. The men in general were great smokers, and suffered much from prolonged marching, exposure to the sun, constant duty, and want of proper rest and sleep. Some of them at times fell into a state in several respects closely resembling delirium tremens à potu; but it

was at the same time distinguished by the character of the delirium which was often apprehensive, but not of the same busy, chattering nature, by the degree and the character of the morbid vigilance, by the tremor being more paroxysmal and less marked, and by the greater heat and dryness of the skin.

Dr Macpherson,¹ after much experience and long observation of the complaint in India, writes, "Authors talk of delirium tremens coming on from moral causes, from excessive or restrained secretions, from abuse of laudanum and of tobacco; but of these causes producing delirium tremens I have no knowledge, although excess in the use of tobacco among Europeans in India is common, and abuse of opium by natives still more so."

Dr Peddie, in contradicting the statement that these substances can induce a state identical with the delirium tremens à potu, remarks, "As regards the other causes, independently of alcoholic liquors, said to produce delirium tremens, the kind of delirium differs in each case or partakes more of the characters of insanity; and there is also a corresponding diversity in the nature of the watchfulness, the muscular tremors, and other symptoms, all of which circumstances, if space permitted, could be explained on very different grounds."

I have now given sufficient reasons for the belief that delirium tremens does not consist simply in nervous irritation and exhaustion from the want of a previous stimulation, and that the sudden withdrawal of alcoholic liquors is not the exciting cause of a paroxysm in either of the forms usually described—the delirium ebrietatis or the delirium ebriosorum. I have also stated my belief that, under certain degrees of alcoholism, a sudden shock or agitation of the nervous system, though not the exciting cause of a paroxysm, will hurry it on sooner than would otherwise have been the case; and that it is a disorder induced by alcohol alone,—that it is a specific toxæmia. I have also hinted that the proper nutrition of the brain is interfered with, which implies that the poison must operate through the circulation. It is now necessary to inquire what the changes are that the continued use of alcoholic liquors produces in the blood. Before doing so, I would premise the proposition, that alcohol poisons the blood, and in consequence poisons the whole body, but more particularly the brain, for which it has a special affinity, and to which it rushes with extreme rapidity. How does it do so?

The experiments and observations of Dr Beaumont on St Martin, the Canadian, satisfactorily proved that if a notable quantity of any strong alcoholic liquid were taken into the stomach during the digestion of food, the solvent properties of the gastric juice were impaired or destroyed by the more or less complete precipitation of the pepsin which is its active principle, and that the process of digestion

¹ Statistics of Delirium Tremens by Drs Macpherson and Atkinson (Indian Annals of Med. Science, Nos. 5 and 6, Oct. 1855, April 1856).

would be perfectly arrested under such circumstances, were it not for the extreme rapidity with which the alcohol is absorbed and passes into the bloodvessels. From the researches of Lallemand, Perrin, Duroy, Dr Edward Smith, and others, it would appear that the alcohol passes from the stomach into the blood unchanged, and that a large proportion of it passes out of the system, as such, by the skin, the kidneys, and other eliminating channels. Part of it, however, is decomposed. A certain amount of water is formed by the combination of the hydrogen of the alcohol with the oxygen of the air, which enters the system in larger amount, owing to the increased frequency of respiration arising from the temporarily excitant action of the alcohol. The production of water, together with acetic acid, is rapidly followed by the formation of carbonic acid and water. The consequence of this misappropriation of oxygen is, that the amount of carbonic acid, absolute and relative, exhaled at the lungs is greatly diminished; and an amount of oxygen is left quite inadequate for the natural metamorphosis or proper oxidation of the waste of the living tissues. This unoxidized waste matter accumulates in the blood, which gradually assumes a more and more venous character. The retained waste is in part converted into fatty matter, which accumulates in the blood in large amount; and, according to Dr M. Huss of Stockholm, the fatty particles may sometimes be detected in the blood by the unaided eye. This fat is very prone to take the place of the normal textural elements, and hence the great frequency of fatty degenerations of the kidneys, the heart, the liver, and other important organs, a healthy state of which is necessary for the continued welfare of the system.

By the laborious and searching investigations of Dr Prout, Dr Davy, Dr Edward Smith, Perrin, Duroy, and others, we have been made acquainted with a long train of injurious effects resulting from the action of alcohol, whereby the blood becomes largely poisoned, and the proper nutrition of the various organs of the body seriously interfered with. It would appear that alcohol frequently reduces the temperature of the blood below the normal healthy standard, and seriously interferes with the due elaboration of the blood-globules. It also very markedly diminishes the amount of carbonic acid exhaled from the lungs, and lessens the amount of urea excreted by the kidneys. It renders the blood highly venous, prevents the natural metamorphosis or oxidation of the waste of the tissues, and occasions an undue accumulation of fatty matters in the vital fluid. It further appears that it cannot in any way be looked upon as food, for it neither diminishes nor repairs the waste of the tissues, and, though some believe that it has, others deny that it has any proper claim to be ranked amongst substances which contribute towards the maintenance of the animal temperature by intra-combustion. I have, however, said sufficient to show that the blood is very impure, and consequently unfitted for the normal nutrition of the nervous centres. Different opinions have been expressed as to the

exact element in the blood which interferes with the healthy nutrition of the brain; but whether it be, as suggested by Dr Morehead, alcohol, as such, incorporated with the nervous matter, or, as hinted by Dr Todd, "a compound formed of alcohol and perhaps some morbid matter generated in the system," it is sufficient for the framing of rational rules of practice, to know that the blood is in a poisoned state, consisting very probably in the presence of unchanged alcohol, and of some matter generated or retained in the system by its influence. Now alcoholic liquors may be taken to such an inordinate extent and with such brief intermissions of sobriety, that the blood becomes speedily poisoned to a degree incompatible with a healthy discharge of the cerebro-spinal functions, and a paroxysm of delirium tremens during the debauch is the consequence; or the intoxicating drink may have been taken daily, but in smaller quantity at the time, and with longer periods of abstinence. The result of this steady drinking is that the system, from the constant presence of the poison in the blood, is kept on the verge of delirium tremens into which it falls on the occurrence of any accidental disturbance of the nervous force. The poison has not accumulated to an extent sufficient for the development of delirium tremens, but the deficiency is compensated for by the additional disturbing influence of some disease or casualty. It is a very singular circumstance, that the toxic properties of alcohol, although constantly manifesting their effects by organic changes in many important organs, and though frequently displayed in the peculiar functional derangement of the cerebro-spinal system constituting delirium tremens, have very little influence in predisposing to disease of the nervous system. It is a remarkable and interesting fact lately ascertained by Dr Marcet,¹ that the abuse of alcohol, although it powerfully predisposes to febrile disorders, to diseases of the lungs, and of the stomach and intestines, has very little tendency to predispose to non-alcoholic disease of the nervous system. Dr Marcet found, on carefully excluding every case of alcoholism, that the predisposition from abuse of alcohol to nervous affections, was "much less than to all other diseases taken collectively;" and, compared with the corresponding predisposition to all other diseases considered individually, least of all with the exception of one group. This is very strange, for as Dr Marcet remarks, "it is a well-known fact that the nervous substance has the power, to a certain extent, of condensing within its tissue the alcohol which has been absorbed into the blood, and, consequently, it would appear but natural, that alcohol interfering with the healthy nutrition of the nervous centres, the nervous system would have become thereby more liable to (non-alcoholic) disease."

(To be continued.)

¹ British and Foreign Med.-Chir. Rev., No 58, April 1862.

ARTICLE V.—*On the Coexistence of Tubercle and Cancer.* By D. RUTHERFORD HALDANE, M.D., Pathologist to the Royal Infirmary of Edinburgh.

WHETHER or not cancer and tubercle can coexist in the same organism, is a question which has been frequently discussed, but which can scarcely be said to have been satisfactorily solved. Some pathologists, perhaps the majority, have maintained that the two diseases are mutually exclusive, that they depend upon different or opposite constitutional conditions, and that the existence of one indicates the impossibility of the simultaneous presence of the other. Others, again, have not considered cancer and tubercle as of so decidedly specific a character; and, while allowing that the two are seldom associated, are quite prepared to meet with cases where they shall be found to coexist. It is not my object to endeavour to solve this question in an absolute manner; but a case which lately came under my notice has led me to bring together a few general remarks on the subject.

In speaking of the possibility of the coexistence of tubercle and cancer, it must of course be premised that the only cases to be referred to are those in which both diseases are in an active condition, for that one may succeed the other is perfectly well known, and universally acknowledged. The order of succession is not, however, indifferent, for, in the great majority of cases, tubercle is the original, cancer the secondary disease. This mode of sequence probably depends upon the circumstance that tubercle is generally a disease of early, cancer of mature or advanced, life. In no small proportion of cases where cancer has been the cause of death, cretaceous concretions, or tubercle in a retrogressive or stationary condition, may be found in the upper part of the lungs. These cases, however, are not available in assisting us to answer the question proposed, for it is quite intelligible that the tubercular diathesis may have been recovered from, and that therefore there was no impediment to the development of the cancerous.

A priori considerations would certainly lead us to believe that the presence of the one morbid condition is incompatible with the simultaneous existence of the other. Neither tubercle nor cancer can be looked upon as a mere local condition; for even granting that either may be in the first instance generated by external causes, it cannot be denied that when the dyscrasia has been once established, the manifestations in the two conditions are of a different character. Our views on this subject, however, must be regulated by the opinions we entertain as to the mode of origin of new growths,—a question which lies at the very foundation of pathology.

The doctrine which, till lately, was universally accepted was this: owing to certain causes, known or unknown, an exudation

from the bloodvessels takes place; in healthy persons, the matter poured out assumes more or less of the characters of the tissue in which it is effused, becomes converted into connective tissue, or degenerates into pus; while, if the system be under the influence of the tubercular or cancerous cachexia, the effused material is converted, under the influence of the constitutional condition, into tubercle or cancer, as the case may be. Granting this view to be correct, it seems impossible that cancer and tubercle could coexist, for we cannot well imagine that the system could be under the influence of two such different dyscrasias at the same time. Arguments, however, are not wanting to show that such a mode of viewing the subject is erroneous. Did new formations take place in the manner alluded to, every exudation in a tubercular individual would necessarily be tubercular; but everyday experience testifies to the contrary. Pleurisy, in a patient suffering from phthisis, is not necessarily or even generally tubercular; connective tissue is organized, and adhesions are formed in precisely the same manner as in an individual in whom there is no constitutional taint. It is indeed said, that as the blood is continually undergoing changes, an exudation at one time may be very different from what it was at another; and that even when the constitution is thoroughly cancerous or tubercular, simple exudations may be poured into tissues as the result of recent wounds or injuries.¹ This, however, would not explain another circumstance which is frequently met with. In cases of tubercular pleurisy, pericarditis, or peritonitis, the organized exudation will generally be found to consist of two parts, one portion being manifestly composed of tubercle, the other of ordinary, or what we may call healthy, connective tissue. Here the matter forming the new structures must, according to the exudation theory, have been poured forth from the same bloodvessels, into the same tissues, at the same time, and under the same constitutional circumstances, and it is inconceivable that if differences in the product depended exclusively upon differences in the inherent composition of the exudation, two such different materials could have been contemporaneously developed.

Another argument to the same effect is derived from what is seen in cases of constitutional syphilis. The system is here under the influence of a peculiar dyscrasia, which manifests itself by deposits or exudations of a particular kind, and by influencing in a peculiar manner certain of the vital processes. On the hypothesis we are now considering, any healthy action should under these circumstances be impossible, every exudation should bear the special syphilitic stamp. This, however, we know not to be the case; wounds may heal, and fractures unite, as rapidly and as soundly in the syphilitic as in the healthy.

The other doctrine as to the genesis of new formations, has been most clearly enunciated by Virchow. Its supporters maintain that

¹ Bennett's Principles and Practice of Medicine, 3d Edition, p. 151.

an exudation is not poured out directly from the bloodvessels, but that every new growth takes its origin from the tissues themselves. Cells can no more arise in situations where no cells previously existed, than new organisms can be produced by spontaneous generation. It can scarcely be doubted that in the physiological renovation of tissues the principle of *continuous development* holds good; and the best investigations go to prove that pathological formations obey the same law. There is now an overwhelming mass of evidence with regard to the origin of pus; and the evidence is scarcely less strong in the case of tubercle and cancer. Why the new tissue should assume a peculiar form, we do not know. We know that when all is going on normally, the process of decay is exactly balanced by the process of repair; although the elements of the tissues are constantly undergoing change, this change takes place so silently, and so continuously, that the parts appear to remain always the same. But now, let an irritant be applied to the tissue where everything was going on so smoothly. A tumultuous process is immediately set up; there is rapid destruction of tissues, but equally rapid repair; as Mr Simon has well expressed it, "*the appreciability of the opposed results* is in itself a differential mark of inflammation."¹ The results even in the most healthy inflammations are, however, far inferior to the reproduction of tissue which goes on in health. The type of inflammatory products is invariably low; the higher tissues, such as nerve or muscle, skin or cartilage, are incapable of being thus produced. Now it is perfectly conceivable that the nature of the irritant may determine the character of the future product. Of this principle we have already some undoubted examples. The bite of a poisonous snake occasions an inflammation which runs on rapidly to gangrene. The irritation of a short hot pipe is believed to lead to epithelioma of the lip; while the frequent contact of soot leads to a similar affection of the scrotum. It is probable that this principle has wider applications than we are yet aware of, and that special forms of disease are often to be explained by something special in their causation.

No doubt there is a difference in the character of the tissues themselves which explains their greater or less liability to particular forms of disease. The tissues of the soundest and healthiest individual are susceptible of inflammation, but it is questionable whether the same can be said with regard to tubercle. It is doubtful whether the ordinary causes of tubercle, such as insufficient food and clothing, damp, cold, impure air, and deficiency of light, can develop the disease in a sound constitution, without the slightest hereditary taint. Virchow, indeed, believes that every dyscrasia has a local origin; in other words, that there is first a local disease, that *it* is the cause of the poisoning of the blood, and that when the poisoning has once taken place, various secondary phenomena, manifestations of the now established dyscrasia, show themselves.

¹ Holmes' System of Surgery, vol. i., p. 6.

He denies that certain changes can persist in the blood considered as an independent fluid, but maintains that, for the keeping up of a permanently morbid condition, there must be a permanent supply of noxious material from other sources. In pyæmia, for instance, the constitution of the blood is generally altered in two ways: there is the presence in it of small masses of fibrine derived from the disintegration of thrombi, and giving rise by embolism to metastatic deposits; and there is absorption of putrid juices, causing unhealthy and gangrenous inflammation. It cannot be questioned that there is much truth in this doctrine, and it is possible that future researches may show that it is of general application; but in the present state of our knowledge this cannot be said of it, for there are various constitutional conditions for which we have hitherto been unable to discover a local origin. This is especially true with regard to tubercle, for very often, before there is the slightest manifestation of local disease, a peculiar condition is established, which physicians have designated as the pretubercular stage of phthisis. The same is probably true with regard to cancer, though to a less extent, as the disease is less strikingly hereditary, and the early stage of the diathesis is less strongly marked. But although there be an early stage of constitutional affection previous to the development of the local disease, it does not follow that the first stage is to be considered as special—that is to say, as the manifestation of a specific dyscrasia. It may, in fact, be nothing more than a condition of generally impaired nutrition and constitutional weakness (which may or may not be hereditary), which makes the individual more susceptible to the exciting causes of the particular disease.

One who holds, though even in a somewhat modified form, the views of Virchow, has much less difficulty in acknowledging the possibility of the coexistence of tubercle and cancer, than one who clings to the exudation theory. I fully believe that both tubercle and cancer are to a certain or even to a great extent constitutional, and that the constitutional conditions connected with them are of a different character; still I have no difficulty in believing that the two morbid conditions may occasionally coexist. It is, however, only by an appeal to facts that a question of this kind can be decided, for no pathological laws are as yet sufficiently established to enable us to refer to them for a solution of such problems. So far as my own experience goes, I have never met with a case where I was satisfied that cancer and tubercle coexisted in an active form. Such cases have undoubtedly been recorded, and some unquestionably may have been instances of the kind; but I am satisfied that not unfrequently the observers were mistaken; in some the characters of the morbid products having been misunderstood, in others the tubercle having certainly been in a state of obsolescence. In illustration of the fallacies to be guarded against, I subjoin a case in which a mistake might readily enough have been committed.

Mary L., aged 40, was admitted, on account of cough and debility, into the Royal Infirmary, under the care of Dr Gairdner, on the 22d of April 1862. She stated that, though not robust, her health had been generally good, but that since the birth of her youngest child (four weeks before admission) she had suffered from cough, accompanied with febrile symptoms. She stated that she had never had hæmoptysis, and had never suffered from pain in the chest.

When admitted she was in a feverish condition, the skin was hot, the tongue dry and cracked. There was much cough, with rather scanty muco-purulent expectoration. On physical examination, there was no dulness on percussion, but the auscultatory signs of bronchitis were present, chiefly on the right side of the chest. About ten days after admission, percussion was found to be markedly dull over the right side. The following was her state on the 3d of May:—

Countenance pallid, no lividity, no flush. Voice broken and hoarse. Respirations, 36. No very marked dyspnœa; lies equally well on either side, or on the back, the latter being her usual position. When closely interrogated, could hardly be brought to admit any pain during the course of her complaint; but after leading questions, referred to the right side as the seat of a little uneasiness. Percussion quite dull over the right side of the chest from above the clavicle to the level of the nipple. Little respiratory sound in front, except above the clavicle, and there chiefly tubular. Sputum muco-purulent; mucus and pus about equally mixed; pus in flakes, not decidedly globular.

On the 2d of June her condition was the following:—

Patient has occasionally tried to get up of her own accord, but has generally been obliged to lie down again soon. Is now very feeble and pallid; there is scarcely any flush whatever; febrile symptoms much less distinct than formerly. Tongue almost perfectly natural, but retaining marks of former cracking. Has still no complaint of pain; chief cause of suffering is cough, which is fully more severe than ever. The dulness or percussion over the right front is diminished, being replaced in part by tympanitic or dull tympanitic resonance. Auscultatory signs, pretty distinctly these of progressive excavation of right front. Expectoration has been increased in quantity, and has become more and more purulent, but is still frothy, and not distinctly globular in character. Last night, for the first time, the sputa were tinged with a little blood. Has had very little diarrhœa.

She became gradually weaker, and died on the 10th of June.

The opinion entertained of the patient's case during her life was that she was suffering from acute phthisis, causing rapid breaking down of the substance of the right lung. The following were the appearances found on dissection:—

Surface of body very pale; abdomen wrinkled.

On proceeding to remove the right lung, firm pleuritic adhesions were found over the upper two-thirds of the organ; in separating these, a very superficial cavity in the anterior part of the lung was opened into. The upper and middle lobes of the right lung were found occupied by numerous communicating cavities exactly resembling such as result from the breaking down of tubercular matter. The walls of the cavities were irregular, coated with a soft yellowish matter, and in many places were crossed by fibrous cords, the remains of obliterated, or nearly obliterated, bloodvessels. In the pulmonary tissue between the cavities were numerous small, opaque, yellow masses. The lower lobe of the lung was in a condition of solid œdema, but contained no deposit. In removing the lung, its root was found to be much thickened by a deposit which surrounded and separated the normal structures. This infiltrated matter was of a pinkish white colour, slightly translucent appearance, of softish consistence, and presented all the physical characters of cancer; on scraping it, an abundant creamy juice, readily miscible with water, exuded. The growth was found to consist of degenerated bronchial glands, which started from the bifurcation of the trachea and followed the root of the right lung; it extended

for about half-an-inch into the substance of the lung, and there ceased abruptly. The normal structures forming the root of the lung were much compressed; the bronchus was converted into little more than a slit, and the pulmonary artery and veins were much diminished in calibre.

The left lung was perfectly healthy, containing no trace of abnormal deposit; the bronchial glands at the root of this lung were also natural.

The liver was healthy. The kidneys were of normal size; in each were several small rounded masses, about the size of pepper-corns, of pinkish colour and rather soft consistence. Other organs natural.

On *microscopic examination* of the creamy juice squeezed from the matter in the root of the right lung, it was found to contain an enormous number of naked nuclei, about $\frac{1}{2000}$ th to $\frac{1}{1000}$ th of an inch in diameter; there was a comparatively small number of rounded or oval cells, pale, but tolerably distinct, and each containing a nucleus similar to those floating loose; finally, there were a few compound granular corpuscles, and some granular matter. On the addition of acetic acid the cells became still paler; the nuclei, on the other hand, were rendered more distinct, but appeared somewhat diminished in size. On examining some of the soft yellow matter from the right lung, which to the naked eye bore a strong resemblance to tubercle, no distinct cells or nuclei could be seen; it appeared to consist entirely of broken down matter, mostly granular, but in some places having a tendency to obscure fibrillation, with some compound granular corpuscles. The structure of the nodules in the kidneys was found to be precisely similar to that of the degenerated bronchial glands in the root of the right lung.

It must be allowed that this case was in some respects a very deceptive one. Without speaking of the symptoms, the appearances presented on dissection were at first precisely such as are found in tubercular disorganization of the lung,—adhesions of the pleura, a large cavity broken into during removal, the walls of which were lined with a soft cheesy matter and crossed by obliterated bloodvessels, seemed to leave little doubt as to the nature of the case. But when the root of the lung came under observation, its condition was evidently due to a cancerous affection, beginning in the glands, and extending into the substance of the lung. Was this then a specimen of conjoined cancer and tubercle? I think not. The microscope showed distinctly the cancerous nature of the glandular disease, but threw no more than a negative light upon the condition of the lung. It must, however, be borne in mind that the histological characters of tubercular deposits are frequently ill-defined, particularly where considerable disintegration has taken place. Accordingly, as the absence of the so-called tubercle-corpuscles could not be considered sufficient evidence of the non-tubercular character of the deposit, its nature had to be decided upon from other considerations. And here a point of great importance was the absolute limitation of the deposit to a portion of one lung. We not uncommonly find one lung in an advanced state of tubercular disease, while the other is comparatively unaffected, but it would, so far as I know, be unprecedented, to have *absolute* freedom from disease in one lung, while the other was in the condition observed in this instance. Under these circumstances, and as there was no trace of tubercle either in the lymphatic glands or in the intestinal mucous membrane, I had no hesitation in coming to the conclusion that the affection

of the lung was non-tubercular. If not tubercular, what then was it? The idea of cancer naturally suggests itself; but this too, I think, must be negatived. In a pretty extensive experience of cancer of the lung, I have never seen it produce destruction of the character met with in this case. Cancer is generally found in the lung in the condition of nodules or of infiltrated masses; in but few cases is softening found to have taken place, and when met with, it has been rather the result of a process of sloughing than of a comparatively slow and gradual disintegration; softening of cancer when it does occur, takes place too rapidly to allow the neighbouring bloodvessels to be sealed up. The microscopic appearances were also opposed to the identity of the deposits in the root of the lung and in its substance. Had the growth in the lung been cancerous we should undoubtedly have found cells, or more probably free nuclei, to testify to what had been the original character of the lesion.

On the whole, I came to the conclusion that the disease in the lung was the result of a low form of inflammation, determining the presence of a fibrinous material which subsequently underwent disintegration. It is now generally recognised by pathologists that all cases of so-called pulmonary phthisis do not result from tubercle, but that some are occasioned by a low grade of the inflammatory process. I believe that this was the case here, and that the pressure upon the important parts in the root of the lung was the determining cause of the lesion. I have more than once seen cases where the pressure of an aneurism on the root of a lung has been connected with very similar appearances, and where the entire absence of tubercle from other organs rendered it highly improbable that the deposit was specific. The absolute character of the lesion is, however, of secondary importance, provided it be admitted that the pulmonary disease was not tubercular; if this be correct, the case narrated will have no bearing upon the question of the coexistence of tubercle and cancer, but it may serve to show how readily, under certain circumstances, an error of observation may be committed.

INFORMATION REGARDING THE REQUIREMENTS IN PRELIMINARY
AND PROFESSIONAL EDUCATION OF THE VARIOUS
LICENSING BODIES.

No special changes have been made in the requirements of the different licensing bodies during the past year. The new regulations have in general come into operation, but there has not yet been time to determine whether they will prove effectual in securing a higher standard of education among medical students. To one or two points of general interest we may take the opportunity of alluding.

When the constitution of the General Council of Medical Education and Registration was determined by the Medical Act, serious doubts were entertained whether a body so constituted would be able to perform satisfactorily the functions assigned to it. The members of the Council were so numerous, and the interests they represented were so various, that it seemed scarcely possible that harmonious co-operation could be secured. At first, however, all went on tolerably smoothly, the members seemed animated by a spirit of mutual forbearance, and although their powers were found to be even more limited than had been anticipated, there seemed reason to hope that the *recommendations* of the Council would prove effectual in reforming abuses which had crept into the system of medical education. In no respect was a reform more necessary than in the regulations regarding preliminary education. It was unfortunately but too well known that the medical profession as a whole was anything but a learned body, and the painful exhibitions of ignorance which were every now and then being made, were calculated to lower all its members in the estimation of the public. One great cause of this was the existence of the system of apprenticeship, under which boys of fifteen or sixteen, at the very time when the cultivation of their mental faculties was most valuable, were removed from their studies to undergo the drudgery of apothecaries' assistants. The Council endeavoured to alter this state of things by issuing an expression of opinion to the effect:—"That the time of commencing professional studies shall be understood to be the time of commencing studies at a medical school." By this recommendation the Council declined to recognise the time passed in apprenticeship as any part of the curriculum of the medical student. In the face of this recommendation the College of Surgeons of England declared that they would recognise instruction from a surgeon as the period of commencement of professional education. At the last meeting of the General Council this infraction of their recommendations was brought before them, and, strange to say, they declined to interfere. It is well known that the Council has no power to *enforce* its regulations, but it has a power of referring to the Privy Council, and its refusal to exercise this power will do much to lower it in the eyes of the profession, and to cause its future proceedings to be viewed with indifference.

The Royal College of Physicians of London has taken an important step. It is well known that that body has for some time been desirous of co-operating with the College of Surgeons in conferring a double qualification upon the general practitioner. The negotiations entered into, however, came to an end in consequence of the College of Surgeons insisting upon having the whole anatomical portion of the examinations in their own hands. To this the Physicians very properly refused to assent, and it seemed as if matters must remain in their former condition. It appears, however, that by the law of England medicine includes surgery, and that the College of Physicians has a right to give a licence to practise in both departments. The College therefore has determined to institute examinations in surgery, and will be able to send out its licentiates fully equipped with a double qualification.

A strong effort has been made to open the medical profession to women. A lady with an American degree is already on the Medical Register; but during the past year there has been a good deal of agitation in order to throw open medical schools in this country to female students. A petition was presented

first to the University of London, and then to the Edinburgh College of Physicians, from a young lady desirous of obtaining a qualification from one or other of these bodies. The petition was rejected by the most narrow majorities, and so the matter rests for the present.

The new regulations in all the Scottish Universities, with the exception of St Andrews, are now in force. At the last-named University there will be another examination under the old system, in December next, but after that time the statutes, as laid down by the Commissioners, will come into effect. Under them ordinary candidates will be required to conform to the rules as to residence and medical study, and only a limited number of practitioners above forty years of age, and at an enhanced fee, will be permitted to obtain the Doctorate by merely passing an examination.

The following pages contain an abstract of the regulations of the various licensing bodies:—Pages 352–357 contain, in a tabular form, the requirements of the different boards under the head of preliminary education. The first two pages contain the requirements of the English and Irish Educational Bodies. The Middle Class Examinations of the Universities of Oxford, Cambridge, and of Ireland, are divided into two classes—a senior and a junior. After 1st January 1863, only the former of these will be accepted; and for this reason, and also in order to save space, we have only given the requirements of this class. Candidates for the Oxford and Cambridge Examinations must be under eighteen years of age, and must pass in all those subjects to which an asterisk is not attached, and in at least two of the sections which are so designated. At the University of London Matriculation Examination, candidates must pass in all the subjects specified, except that a knowledge of *either* French or German will be sufficient. At the Registration Examination of the University of Durham, a knowledge of French is not imperative. At the Queen's University in Ireland, candidates must pass in the four first sections of the Table, and in at least two of the others.

The four succeeding pages show the requirements of the Scottish Universities, of the Irish Colleges, and of the Colleges of Physicians and Surgeons in the three kingdoms. In the case of each of these bodies the candidate must pass in *all* the subjects to which no asterisk is attached, and in *two* of the others so designated. The only exception is in the case of the College of Surgeons of England, where candidates are required to pass in only *one* of the extra branches.

By the new statutes of the Scottish Universities three medical degrees have been instituted, those, namely, of Bachelor of Medicine (M.B.), Master in Surgery (C.M.), and Doctor of Medicine (M.D.) The degree of C.M. is not, however, conferred on any one who does not at the same time obtain the degree of M.B. All candidates for the two first degrees are required to pass the full preliminary examinations, and to have been engaged in professional study for four years before being admitted to the final examination. The degree of M.D. may be conferred on any Bachelor of Medicine twenty-four years of age, who has been engaged, subsequently to his having received the degree of M.B., for at least two years in medical and surgical practice, provided that he is either a Graduate in Arts of a university, or that he has passed an examination in Greek and in Logic or Moral Philosophy, in addition to the other branches of a preliminary examination. Those, however, who had commenced their medical studies previous to the period at which the statutes came into force at the different universities, are entitled to graduate either under the system in force before that time, or under that now established, according as they may prefer to comply with the regulations in force before or after these dates. Consequently, those who began their medical studies previous to the dates mentioned below, may either take the degree of M.D. at the age of twenty-one, and without a preliminary examination, except in Latin; or they may obtain the degrees of M.B. and C.M., in which cases, however, they will be required to pass the full preliminary examination. This alternative refers to candidates who began their medical studies before the following dates:—In Edinburgh, before the 4th of February 1861; in Glasgow, before the 1st of October 1861; and in Aberdeen, before the 5th of November 1861.

Subjects of Examination.	UNIVERSITY OF OXFORD. Mid. Class Examination.	UNIVERSITY OF CAMBRIDGE. Mid. Class Examination.	UNIVERSITY OF LONDON. Matriculation Examination.
ENGLISH.	Grammar and Composition.	Grammar and Composition.	Grammar and Composition.
HISTORY.	Outlines of English.	Outlines of English.	English, to end of Seventeenth Century.
GEOGRAPHY.	Particularly of the British Colonies.	Particularly of Europe.	Modern.
ARITHMETIC.	Principles and Practice.	Principles and Practice.	Ordinary Rules, including Fractions and Extraction of Square Root.
RELIGIOUS KNOWLEDGE.	Old Testament to death of Solomon. Gospels of St Mark and St Luke, and Acts of Apostles.	2d Samuel, 1st Kings. Gospel of St Luke. Church Catechism. Whately's Evidences.	...
GEOMETRY.	* Euclid, Books I. to IV.	* Euclid, Books I. to VI. Plane Trigonometry.	Euclid, Books I. to IV.
ALGEBRA.	* To end of Quadratic Equations.	* To end of Quadratic Equations.	To Simple Equations inclusive.
NATURAL PHILOSOPHY.	* General knowledge of.	* Elementary Principles.	Mechanics, Hydrostatics, Pneumatics, Acoustics, Optics.
LATIN.	* "A fair knowledge."	* Cæsar, de Bell. Gall., Lib. I. & II. Virgil, Æneid, Lib. VI. English into Latin.	Sallust, Jugurthine War. Virgil, Georgics, Book I.; Æneid, Book VI.
GREEK.	* "A fair knowledge."	* Xenophon, Anabasis, Book II. Homer, Iliad, Book IV.	Homer, Odyssey, B. IX. Xenophon, Anabasis, B. II.
FRENCH.	* "A fair knowledge."	* Fables of La Fontaine. History during Reign of Louis XIV. English into French.	* Racine, Athalie; Corneille, Polyeucte; Fénelon, Dialogues des Morts.
GERMAN.	* "A fair knowledge."	* Andersen, Bilderbuch ohne Bilder. English into German.	Schiller's Don Carlos. Goethe, Hermann and Dorothea.
BOTANY.	* Vegetable Physiology.	* Description and Classification of Plants.	...
ZOOLOGY.	* Animal Physiology.	* Description and Classification of Animals.	...
CHEMISTRY.	* General Principles. Analysis.	* General Principles. Inorganic.	General Principles. Inorganic.

UNIVERSITY OF DURHAM. Registration Examination.	DUBLIN UNIVERSITY. TRINITY COLLEGE.	QUEEN'S UNIVERSITY, IRELAND. Mid. Class Examination.	COLLEGE OF PRECEPTORS. First Class Certificate.
Grammar and Writing to Dictation.	Composition.	Grammar and Composition.	Grammar, Composition, and Literature.
English, Reign of Elizabeth.	English.	English, especially of reign of George III.	English.
Great Britain, Ireland, Italy.	Modern.	Chiefly Europe.	General.
Ordinary Rules, including Vulgar and Decimal Fractions.	Principles and Practice.	Ordinary Rules.	Ordinary Rules.
Gospel according to St Matthew.	...	...	1st and 2d Samuel, Acts of the Apostles.
* Euclid, Book I.	...	* Euclid, Books I. to IV.	Euclid, Books I. and II.
...	First Four Rules and Fractions.	* To end of Quadratics.	To end of Quadratics.
...	...	* Mechanics, Hydrostatics, Surveying, Navigation.	"Advanced."
One of the following : Cæsar, de Bell. Gall. B. IV. Cicero, de Amicitia. Virgil, Æneid, Book I. Horace, Odes, Book I.	Two of the following : Livy, Lib. III. IV.; Virgil, Æneid, Lib. I. II. III. VI.; Sallust; Horace, Odes; Hor. Satires & Epistles; Terence, Andria and Heautontimorumenos.	* "A fair knowledge."	Sallust, Catilina, and Vir- gil, Æneid, Lib. I. to IV.; or Cicero de Senectute, and Horace, Od. Lib. I. to III.
* Xenophon's Anabasis, Book I. Grammar.	Two of the following : Homer, Iliad, L. I. to III.; Greek Test., Gospels St Luke and St John, Acts; Euripides, Phœnissæ; Sophocles, Ajax; Plato, Socrates; Lucien; Xen- ophon, Anab. L. I. to III.	* "A fair knowledge."	Xenophon, Anab. Lib. I. to III. Euripides, Medea.
* Voltaire, Histoire de Charles XII. Grammar.	...	* "A fair knowledge."	Books not announced.
...	...	* "A fair knowledge."	Books not announced.
...	...	* Vegetable Physiology.	...
...	...	* Animal Physiology.	...
...	...	* General Principles. Practical Analysis.	General knowledge.

Subjects of Examination.	UNIVERSITY OF EDINBURGH. Preliminary Examination.	UNIVERSITY OF GLASGOW. Preliminary Examination	UNIVERSITY OF ABERDEEN. Preliminary Examination.
ENGLISH.	Writing from Dictation. Composition.	Grammar and Composition.	Composition, Writing to Dictation.
HISTORY.	...	...	...
GEOGRAPHY.	...	...	...
ARITHMETIC.	Common Rules, including Decimals.	Common Rules, including Decimals.	Common Rules, including Decimals.
GEOMETRY.	Euclid, Books I., II., and III.	Euclid, Book I.	Euclid, Book I.
ALGEBRA.	To Simple Equations.	...	To Simple Equations.
MECHANICS.	Lardner's Mechanics.	Lardner's Elements of Natural Philosophy.	Golding Bird's Elements, Part I., or Galbraith and Haughton's Manual.
LATIN.	Virgil, <i>Æneid</i> , Lib. II., A Latin Prose Author.	Cæsar, de Bello Gallico, Lib. II.; Virgil, <i>Æneid</i> , Lib. I. ...	Cæsar, de Bello Gallico, Lib. I.; Virgil, <i>Æneid</i> , Lib. III.
GREEK.	* Xenophon, or Arrian.	* Xenophon, <i>Anabasis</i> , Book I., or Gospel according to St John.	* Xenophon, <i>Anabasis</i> , Book II.
FRENCH.	* Voltaire, <i>Histoire de</i> <i>Charles XII.</i>	* Voltaire, <i>Histoire de</i> <i>Charles XII.</i>	* Voltaire, <i>Histoire de</i> <i>Pierre le Grand.</i>
GERMAN.	* Lessing's <i>Laokoon.</i>	* Schiller, <i>William Tell.</i>	* Schiller, <i>William Tell.</i>
HIGHER MATHEMATICS.	* Euclid, Books I. to VI. Trigonometry and Conic Sections. Algebra.	* Euclid, Books I. to VI. Algebra, including Quad- ratics, Elements of Tri- gonometry.	* Plain Trigonometry. Quadratic Equations. Binomial Theorem. Logarithms.
NATURAL PHILOSOPHY.	* Elements of, by Golding Bird and Brooke.	* Elements of, by Golding Bird and Brooke.	* Golding Bird, Light, Heat, Electricity.
LOGIC.	* Formal & Verbal Fallacies. Theory and Methods of Induction.	* Whately's <i>Logic</i> , Books II. and III.	* Thomson's <i>Laws of</i> <i>Thought</i> ; or Morell's <i>Hand-</i> <i>Book of Logic.</i>
MORAL PHILOSOPHY.	* Adam Smith's <i>Moral</i> <i>Sentiments.</i>	* Dugald Stewart on the <i>Active Powers</i> ; or Dr Fleming's <i>Manual.</i>	* Reid's <i>Active Powers</i> ; or Wayland's <i>Elements of</i> <i>Moral Science.</i>
NATURAL HISTORY.	...	* Geology or Zoology.	Classification of Animal Kingdom, Vertebrata.

QUEEN'S COLLEGE, BELFAST. Matriculation Examination.	QUEEN'S COLLEGE, CORK. Matriculation Examination.	QUEEN'S COLLEGE, GALWAY. Matriculation Exam.	ROYAL COLLEGE OF PHYSICIANS, LONDON. Preliminary Examination.
Grammar and Composition.	Grammar and Composition.	Grammar and Composition.	Grammar and Composition.
Grecian, to death of Alexander the Great.	Grecian, to death of Alexander the Great; Roman to Augustus.	Outlines of Grecian and Roman.	...
Outlines of Ancient and Modern.	Outlines of Ancient and Modern.	Outlines of Ancient and Modern.	...
Common Rules, including Decimals, Simple Inter- est, and Extraction of Square Root.	Common Rules, including Decimals and Simple Interest.	Common Rules, includ- ing Decimals.	Common Rules, including Decimals.
Euclid, Books I. and II.	Euclid, Book I.	Euclid, Book I.	Euclid, Book I.
To Simple Equations, inclusive.	Elements.	To Simple Equations, inclusive.	To Simple Equations, inclusive.
...
Any two of the following: Horace, Virgil, Cicero de Senectute, Sallust, Livy, Quintus Curtius, Cæsar.	One of the following: Virgil, Æneid, Lib. I. and II.; Sallust, Catilina. Cæsar, de Bell. Gall, Lib. I.	Cæsar, de Bello Gallico, Lib. V., or Virgil, Æneid, Lib. I. English into Latin.	Cicero, de Natura Deorum, Lib. I.; Virgillii, Æneis, Lib. II.; or Horace, Odes, Book I.; Cicero de Se- nectute.
Any two of the following: Homer, Iliad, Books I, II.; Euripides, Alcestis; Xenophon's Anabasis, Books I. and II.; Lucian.	One of the following: Homer, Iliad, Books I. and II.; Xenophon, Ana- basis, Books I. and II.; Lucian, Walker's Selec- tions.	Xenophon's Anabasis, Book I. Grammar.	...
...
...
...
...	...	...	Mechanics, Acoustics, Optics, Hydrostatics, Pneumatics.
...
...
...

Subjects.	ROYAL COLLEGE OF PHYSICIANS, EDINBURGH. Preliminary Examination.	KING'S & QUEEN'S COLL. PHYS., IRELAND. Preliminary Examination.	ROYAL COLL. OF SURGEONS, ENGLAND. Preliminary Examination.
ENGLISH.	Composition and Writing to Dictation.	Composition.	Grammar and Composition.
HISTORY.	...	...	Outlines of English History.
GEOGRAPHY.	...	...	Europe, especially the British Isles.
ARITHMETIC.	Common Rules, including Decimals.	To end of Decimal Fractions.	To end of Vulgar Fractions.
LATIN.	Cæsar, de Bello Gallico, Lib. I.; Virgil, Æneid, Book V.	Virgil, Æneid, Lib. I. and II. Or Sallust. Or Cæsar, de Bell. Gall., Lib. I. and II.	* Cæsar, de Bell. Gall., Book I.
GEOMETRY.	* Euclid, Books I., II., and III.	Euclid, Books I. and II.	* Euclid, Books I. and II.
ALGEBRA.	* To Simple Equations, inclusive.	...	* To Simple Equations, inclusive.
NATURAL PHILOSOPHY.	* Statics and Dynamics (Car- penter's Natural Philos- ophy).	...	* Elementary Mechanics.
GREEK.	* St John's Gospel. Xenophon's Anabasis, Book I.	Homer's Iliad, Book I. Or Xenophon's Anabasis, Book I. Or Walker's Lucian.	* St John's Gospel.
FRENCH.	* Voltaire, Histoire de Charles XII.	*	* Voltaire, Histoire de Charles XII.
GERMAN.	* Schiller, Geschichte des dreissigjährigen Kriegs, Books I. and II.	*	* Schiller, Geschichte des dreissigjährigen Kriegs, Books I. and II.
BOTANY.	* Anatomy and Organo- graphy, — Umbelliferae, Leguminosae, and Lili- aceae.	...	* Classification of Plants.
ZOOLOGY.	* General Classification— Articulata.	...	* Classification of Animals.
CHEMISTRY.	...	...	* Elementary Facts.

ROYAL COLL. SURGEONS, EDINBURGH. Preliminary Examination.	ROYAL COLL. SURG., IRELAND. Preliminary Exa.	FACULTY OF PHYS. & SURGS., GLASGOW. Preliminary Exam.	APOTHECARIES' COY., LONDON. Preliminary Exam.	APOTHECARIES' HALL, IRELAND. Preliminary Exa.
Composition and Writing to Dictation.	...	Composition and Writing to Dicta- tion.	Grammar and Com- position.	Composition.
...	English: the Tudor Period.	English.
...
Common Rules, including Decimals.	...	Common Rules, in- cluding Decimals.	Common Rules, to end of Decimals.	To the end of Decimals.
Cæsar, de Bello Gallico, Lib. I.; Virgil, Æneid, Book V.	Virgil, Æneid, Lib. I. to V.	Cæsar, de Bell. Gall., Lib. I. Virgil, Æneid, Lib. V.	Cæsar, de Bell. Gall., Lib. I., II. Or Virgil, Æneid, Lib. VI. Or Cicero, de Amicitia.	Sallust, Catilina; Virgil, Æneid, Lib. I., II., and III.
* Euclid, Books I., II., and III.	...	* Euclid, Books I., II., and III.	Euclid, Book I.	Euclid, Books I. and II.
* To Simple Equations, inclusive.	...	* To Simple Equations, inclusive.	Algebra, including Simple Equations.	To end of Simple Equations.
* Statics and Dynamics (Car- penter's Natural Philos- ophy).	...	* Statics and Dynamics (Carpenter's Natu- ral Philosophy).	Elements of Statics and Dynamics.	...
* St John's Gospel. Xenophon's Anabasis, Book I.	St John's Gospel.	* St John's Gospel. Xenophon, Anabasis, Lib. I.	Xenophon, Memora- bilia.	Gospel of St John. Lucian, 20 Dia- logues. Or Homer's Iliad, Books I. and II.
* Voltaire, Histoire de Charles XII.	...	* Voltaire, Histoire de Charles XII.	...	Voltaire, Histoire de Charles XII. Or Telemaque.
* Schiller, Geschichte des dreissigjährigen Kriegs, Books I. and II.	...	* Schiller, Geschichte des dreissigjäh- rigen Kriegs, Bs. I. and II.	...	...
Anatomy and Organo- graphy, — Umbelliferae, Leguminosae, and Lili- aceae.	...	* Anatomy & Organo- graphy, — Umbelli- fere, Leguminosae, and Liliaceae.	...	...
* General Classification— Articulata.	...	* General Classifica- tion—Articulata.	...	...
...

COURSE OF STUDY REQUIRED BY THE VARIOUS BOARDS OF THE UNITED KINGDOM.

	Age.	Anatomy.	Dissections.	Chemistry.	Practical Chemistry.	Materia Medica.	Physiology or Institutes of Medicine.	Surgery.	Practice of Medicine.	Midwifery.	Medical Jurisprudence.	Pathology or Morbid Anatomy.	Botany.	Natural History.	Practical Pharmacy.	Clinical Surgery.	Clinical Medicine.	Hospital Attendance.	Practical Midwifery.	Dispensary or Out-door Practice.	Vaccination.
	Years.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.
Edinburgh University, M.B. & C.M.,	21	6	6	6	3	6	6	6	6	6	3	6	3	3	3	6	6	24	3 mos. or 6 cas.	6	
University of Glasgow, M.B. & C.M.,	21	6	6	6	3	6	6	6	6	6	3	6	3	3	3	24	6	24	do.	6	
University of Aberdeen, M.B. & C.M.,	21	12	6	6	3	6	6	6	6	6	3	6	3	3	3	6	6	24	do.	6	
University of St Andrews, M.D.,	22	12	6	6	3	3	6	6	6	6	3	6	3	3	1 crs	6	6	24	do.	6	
London University, M.B.,	21	6	15	6	6	1 crs	6	6	6	6	1 crs	6	3	3	1 crs	2 yrs.	2 yrs.	4 yrs.	20 cas.	6	
University of Durham, M.B. & M.D.,		6																			
Dublin University, M.B.,		6																			
" Surgical Diploma,																					
The Queen's University of Ireland, M.D.,	18	18	6	6	3 ms	6	6	6	6	6	3	6	3	3	3	9	9	18	3 mos.	6	
Royal College of Physicians, London,	12	12	6	6	3	6	12	6	6	6	3	6	3	3	3 mos.	12	27	27	3 mo.	6	
Royal College of Physicians, Edinburgh,	21	6	6	6	3	3	12	6	6	6	3	6	3	3	3	9	24	24	20 cas.	6	
King and Queen's Col. of Phys. Ireland,	21	6	6	6	3	1 crs	6	6	6	6	3	6	3	3	3	6	24	6 cases	6 cas.	6	
Royal College of Surgeons, London,*	21	6	12	6	6	6	6	6	6	6	6	6	6	6	3	6	21	27	6 mo.	6	
Royal College of Surgeons, Dublin,	18	12	6	6	6	3	12*	12	6	6	3	6	3	3	3	27*	9*	33	6 mo.	6	
Royal College of Surgeons, Edinburgh,	21	18	6	6	6	3	18	18	6	6	3	6	3	3	3	18	9	27	6 cas.	6	
Faculty of Phys. and Surgeons, Glasgow,	21	12	6	6	3	3	6 or 12	6	6	6	3	3	3	3	3	6 or 12	6	24	6 cas.	6	
For Double Qualification by Royal College of Phys. and Surg. of Edinburgh,	21	12	6	6	3	3	6 or 12	6	6	6	3	3	3	3	3	6 or 12	6	24	6 cas.	6	
For Double Qualification by Royal College Phys. Edinburgh, and Faculty of Physicians and Surgeons of Glasgow,	21	12	6	6	3	3	6 or 12	6	6	6	3	3	3	3	3	6 or 12	6	24	6 cas.	6	
Apothecaries' Hall, England,	21	12	6	6	3	3	6 or 12	6	6	6	3	3	3	3	3	6 or 12	6 or 12	24	6 cas.	6	
" Ireland,	21	12	6	6	3	3	6 or 12	6	6	6	3	3	3	3	3	6 or 12	6 or 12	24	6 cas.	6	
	21	12	6	6	3	3	6 or 12	6	6	6	3	3	3	3	3	6 or 12	12	24	6 cas.	6	
	21	6	12	6	3	3	6	6	12	3	3	6	3	Appr.	Appr.	9	18	27	20 cas.	9 mo.	

ARMY MEDICAL DEPARTMENT.—Candidates for admission to the Competitive Examination required for the Army Medical Service, must possess distinct qualifications to practise Medicine and Surgery, which may be derived either from separate bodies, or from a single body, provided that body has power to grant a legal qualification in each department.

ROYAL NAVY MEDICAL SERVICE.—Candidates must possess such Diplomas or Licenses as would qualify a civilian to practise Medicine and Surgery. ENGLISH POOR-LAW BOARD.—Candidates for the appointment of Medical Officer are required to be registered under the Medical Act, and must be legally qualified to practise both Medicine and Surgery, in virtue of Diplomas or Licenses granted by competent legal authority in England, Scotland, or Ireland.

* Students from the Schools of Scotland are admitted to examination at the Royal College of Surgeons of England, if they have followed the course of study required by the regulations of the Royal College of Surgeons of Edinburgh. Students in Scotland, therefore, are not required to attend more than one course of Physiology, six months Clinical Surgery, six months Clinical Medicine, and twenty-four months Hospital.

Information respecting exceptions to these regulations under various circumstances, and other details as to the order in which, according to some Licensing Bodies, the courses should be taken out, etc., must be obtained by consulting the published Charts of the Colleges, etc. Students should apply to the Secretary to each Board which they intend to pass for a detailed copy of its Regulations.

MEDICAL SCHOOLS OF SCOTLAND, 1862-63.

WINTER SESSION.

SUBJECTS.	UNIVERSITY OF EDINBURGH.	SURGEONS' HALL, EDINBURGH.	UNIVERSITY OF GLASGOW.	ANDERSON'S UNIVERSITY, GLASGOW.	UNIVERSITY OF ABERDEEN.	UNIVERSITY OF ST ANDREWS.
Anatomy, Systematic and Practical, with Demonstrations.	Professor Goodsir.	Dr John Struthers.	Dr A. Thomson.	Dr George Buchanan.	Professor Lizars.	...
Physiology, or Institutes of Medicine.*	Dr Bennett.	Dr Sanders.	Dr A. Buchanan.	Dr E. Watson.	Dr Ogilvie.	Dr Day.
Chemistry, and Practical Chemistry.	Dr Playfair.	Dr Macadam. Dr Murray Thomson.	Dr T. Anderson.	Dr Penny.	Professor Brazier.	Dr F. Heddle.
Materia Medica and Therapeutics.	Dr Christison.	In Summer.	Dr Easton.	Dr Morton.	Dr Harvey.	...
Practice of Medicine.	Dr Laycock.	Dr W. Begbie,† Dr Haldane.	Dr Gairdner.	Dr A. Anderson.	Dr Macrobin.	...
Surgery.	Professor Miller.	Mr Spence,† Dr Watson,† Mr Edwards.†	Prof. Lister.	Dr Macleod.	Professor Pirrie.	...
Midwifery.	Dr Simpson.	In Summer.	Dr Pagan.	Dr Paterson.	Dr Dyce.	...
Natural Philosophy.	Professor Tait.	Mr Lees.	Professor W. Thomson.	Dr Taylor.	Professor Thomson.	Professor Fischer.
Natural History.	Professor Allman.	...	Dr Rogers.	...	Professor Nicol.	...
General Pathology.	Dr Henderson.	...	...	...	...	...
Clinical Medicine.	Drs Bennett and Laycock.	Drs W. Begbie,† Sanders, and J. M. Duncan.	Dr Bell and Dr Ritchie.		Dr Kilgour.	...
Clinical Surgery.	Professor Syme.	Mr Spence.	Dr A. Buchanan and Dr Lyon.		Dr Keith.	...

* This course is equivalent to that given under the name of general anatomy and physiology in the English Schools. Special schedules are issued by the London Boards for their Scotch students, which should always be inquired for.

† These are not conjoint courses, but separate ones by the gentlemen named.

‡ This is a joint course.

MEDICAL SCHOOLS OF SCOTLAND, 1862-63.

SUMMER SESSION.

SUBJECTS.	UNIVERSITY OF EDINBURGH.	SURGEONS' HALL, EDINBURGH.	UNIVERSITY OF GLASGOW.	ANDERSON'S UNIVERSITY, GLASGOW.	UNIVERSITY OF ABERDEEN.
Practical Anatomy and Demonstrations.	Professor Goodsir.	Dr John Struthers.	Dr A. Thomson.	Dr George Buchanan.	Prof. Lizars.
Botany.	Dr Balfour.	Mr Bayldon.	Dr W. Arnott.	Dr Bell.	Dr Dickie.
Materia Medica.	...	Dr Jackson. Dr Stewart.	...	...	...
Midwifery.	...	Dr Keiller.* Dr Duncan.*	...	Dr Paterson.	...
Medical Jurisprudence.	Dr MacLagan.†	Dr Littlejohn.†	Dr Rainy.†	Dr Cowan.	Dr Ogston.†
Comparative Anatomy.	Professor Goodsir.	Dr John Struthers.	Dr A. Thomson.	...	Prof. Lizars.
Histology.	Dr Bennett.	Dr Sanders.	...	...	Dr Ogilvie. Mr J. Thomson.
Practical Chemistry.	Dr Playfair.	Dr Macadam. Dr Murray Thomson.	Dr T. Anderson.	Dr Penny.	Prof. Brazier.
Natural Philosophy.	...	Mr Lees.	...	...	Professor Thomson.
Natural History.	Professor Allman.	...	Dr Rogers.	...	Prof. Nicol.
Clinical Medicine.	Drs Bennett and Laycock.†	Drs W. Beghie,† Sanders, and J. M. Duncan.	Dr Fraser and Dr R. Scott Orr.		Dr Kilgour.
Clinical Surgery.	Prof. Syme.	Mr Spence.	Dr Morton and Dr G. Buchanan.		Dr Keith.

* These are not conjoint courses, but separate ones by the gentlemen named.

† Drs Rainy and Ogston deliver their courses only in winter. Drs MacLagan and Littlejohn give courses during both the winter and summer sessions.

‡ This is a joint course.

For additional Summer Courses on special subjects, see the Prospectus of each School.

LIST OF HOSPITALS, DISPENSARIES, ETC., IN CONNEXION WITH THE MEDICAL SCHOOLS OF SCOTLAND.

EDINBURGH.

ROYAL INFIRMARY, including **LOCK HOSPITAL**. Upwards of 560 beds. Visits daily from 12 till 2 P.M. Physicians—Drs Bennett and Laycock, Professors of Clinical Medicine; Dr Simpson, Clinical Professor for Diseases of Women; Drs J. W. Begbie, W. R. Sanders, Clinical Lecturers; Dr J. Matthews Duncan (on Diseases of Women). Extra Physician—Dr Haldane.

Surgeons—Mr Syme, Professor of Clinical Surgery; Mr Spence, Lecturer on Clinical Surgery; Dr Gillespie. Extra Surgeon, Professor Miller. Assistant Surgeons—Drs Struthers and Watson. Consulting Surgeon, Dr Dunsmure. Ophthalmic Surgeon, Mr Walker. Pathologist, Dr Haldane.

ROYAL MATERNITY HOSPITAL. 26 Beds: 279 in-patients and 380 out-patients annually. Consulting Physicians—Drs Simpson and Moir.—Physicians—Drs Thomson, Weir, Keiller, A. Wood. Consulting Surgeon, Dr Ziegler. Ordinary Surgeon, Dr Dunsmure.

HOSPITAL FOR SICK CHILDREN. 20 beds. Consulting Physicians—Professor Christison and Dr C. Wilson. Physicians—Drs Graham Weir, Newbigging, and Keiller.

ROYAL PUBLIC DISPENSARY AND VACCINE INSTITUTION. About 11,000 patients annually. Medical Officers—Drs Spence, Pattison, Somerville, Haldane, Wright, Sanders, Husband, Littlejohn, D. Wilson, Ritchie, Pow. Physicians-Accoucheurs—Drs Keiller, Matthews Duncan, Wright, Pattison. Superintendent of Vaccination, Dr Husband. Visits daily at 2 P.M. Vaccination on Wednesdays and Saturdays at 12 noon.

NEW TOWN DISPENSARY. 7800 patients annually. Medical Officers—Drs J. Hunter, Foulis, Edwards, Watson, Dycer, Scoresby-Jackson. Consulting Surgeon, Dr MacLagan. Physicians-Accoucheurs—Drs Dumbreck, Pagan, Simpson, Weir. Superintendent of Vaccination, Dr J. Hunter. Visits daily at 2 P.M. Vaccination on Tuesdays and Fridays from 12 to 1.

ROYAL ASYLUM FOR THE INSANE. About 660 patients. Physician, Dr Skae. Lectures and Clinical Visits in summer.

EYE INFIRMARY, George Street. Surgeons—Benjamin Bell, Esq., F.R.C.S., and Dr Watson, F.R.C.S. Consulting Surgeon, Dr Hamilton. Open daily at 1 P.M.

EYE DISPENSARY, Cockburn Street. 1150 patients annually. Surgeons—Mr Walker, Dr Wilson. Consulting Surgeon, Dr Duncan. Open Monday, Wednesday, and Friday, at 1 P.M.

EAR DISPENSARY. Dr Jackson. Mondays and Fridays 11 to 12.

EAR DISPENSARY, Cockburn Street. Dr T. Keith. Tuesdays at 12. Average, about 20 cases daily.

DENTAL DISPENSARY, Cockburn Street. Consulting Surgeons—Professor Goodsir, Mr Spence, F.R.C.S. Consulting Dentist, Mr Nasmyth, F.R.C.S. Surgeon Dentists—Mr Imlack, F.R.C.S., Dr John Smith, Dr Orphoot. Daily, 9 to 10 A.M.

GLASGOW.

ROYAL INFIRMARY. 600 beds. Visits daily at 8.30 A.M. Physicians—Drs Ritchie, Fraser, Scott Orr, and J. Bell. Dispensary Physicians—Drs Cowan and Steven.

Surgeons—Drs J. Morton, G. Buchanan, Professor Lister, and Dr Lyon. Dispensary Surgeons—Drs Dewar and Macleod.

LOCK HOSPITAL. 47 beds. Consulting Medical Officer, Dr Tannahill. Acting—Drs G. H. B. Macleod, Dr Perry.

LYING-IN HOSPITAL AND DISPENSARY. 20 beds: in-patients 369, out-patients 635. Physicians—Drs J. G. Fleming, J. G. Wilson. House-Surgeon, Mr G. Gentle.

UNIVERSITY LYING-IN HOSPITAL AND DISPENSARY. 500 patients. Physicians—Drs Pagan and Leishman. Assistant, Mr J. Christie.

WESTERN PUBLIC DISPENSARY. Medical Officers—Drs J. Gray, A. Buchanan, junior, J. D. Maclaren, and T. M. Anderson. Surgeon-Dentist, Mr G. Buchanan.

EYE INFIRMARY. 24 beds: 1600 patients annually. Consulting Surgeon, Dr Rainy. Ordinary Surgeons—Drs W. Mackenzie, Anderson, Brown. Assistant Surgeon, Dr G. Rainy.

ABERDEEN.

ROYAL INFIRMARY. Upwards of 280 beds. Visits daily at 10 A.M. Physicians—Drs Dyce, Kilgour, Lecturer on Clinical Medicine, Nicol, Williamson.

Surgeons—Messrs Keith, Lecturer on Clinical Surgery, Pirrie, Kerr, Fiddes. Ophthalmic Surgeon, Dr Cadenhead.

GENERAL DISPENSARY. 5000 patients annually. Medical Officers—Drs Leslie, Galen, Smith, Forsyth, Fraser, Reith. Visit daily at 9.30 A.M. Vaccination every Wednesday at 3 P.M.

LUNATIC ASYLUM. Consulting Physician, Dr Macrobin. Resident Physician, Dr Robert Jamieson.

OPHTHALMIC INSTITUTION. 500 patients. Surgeon, Dr Cadenhead.

Part Second.

REVIEWS.

An Essay on the Malformations and Congenital Diseases of the Organs of Sight. By W. R. WILDE, M.D., F.R.C.S., Surgeon Oculist in Ordinary in Ireland to the Queen, etc., etc. London: Churchill: 1862.

IN most of the treatises on diseases of the eye published in this country, some of the more important malformations and congenital diseases of that organ are brought under consideration, but the information on these subjects contained in them is so limited in extent, all reference to many of these affections being omitted *in toto*, while others are merely incidentally mentioned, that for reference on such points these books are totally unsuited. Yet no separate work on this important class of diseases appeared in this country till Mr Wilde, collecting several papers which he had at intervals contributed to the *Dublin Quarterly Journal*, revised and published them in a small volume under the above unassuming title.

In Germany, the literature on this class of affections is very complete, more especially since the publication of Von Ammon's most valuable work on diseases of the eye ("Klinische Darstellung der Krankheiten und Bildungsfehler des Menschlichen Auges") in which one part is especially devoted to congenital affections. The cases therein narrated and referred to, as well as those recorded in various publications at home and abroad, and such others as have come under Mr Wilde's personal observation, are used as a basis of a classification.

Although rather condensed as a work of reference, Mr Wilde's book is pleasantly written and very readable, advantages to which but few pure works of reference can lay claim. It is, moreover, much more complete than might have been expected, considering the manner in which the substance of the work was originally produced. The following synoptical extract serves well to indicate the range of subjects brought under consideration:—"We will begin with the defences of the eye, and ocular appendages, the brow, the lids, the ciliae, and lachrymatory organs; then proceed to the affections of the globe itself, in figure, size, position, and colour; in its various tunics, the conjunctiva, the cornea, and sclerotic; next, follow up this inquiry with regard to the parts subsidiary to the perfection of the eye as an optical instrument, as the iris and the pigmentum nigrum. Afterwards we shall take up the specially sensitive parts, as the optic nerve and the retina; this will lead us to the consideration of the

malformations and the diseases of the dioptric or refractive media, the vitreous body and the crystalline lens, the affections of which are so common in this country, and conclude with a few general observations upon the condition of the eye or eyes, taken as a whole, found in those monstrosities denominated *monoculi*."

Distinction is further made between those affections which are the result of arrested development, and those due to intra-uterine disease. In cases belonging to the former class, the period at which the arrest of development occurred can generally be made out, and some of these cases have served to put to the test of observation, the theories held with regard to the nature and manner of formation of the organ of vision.

Particularly worthy of notice is the chapter upon congenital malformations of the iris, in which many interesting and unique cases are narrated. Instances are given of all varieties of cleft iris (*coloboma iridis*), giving rise to pupils of various forms and sizes. In one case recorded by Von Ammon, and referred to by Wilde, the co-existence of a deficiency of the choroid and retina (*coloboma choroideæ*) at a part opposite the fissure of the iris is clearly pointed out. The attention of other observers was thus directed to this point, some of whom failed to discover a similar condition in those cases they had the opportunity to examine, but, since the invention of the ophthalmoscope has afforded a new method of examination, the choroidal complication has been found to be present in many—if not all—cases of *coloboma iridis*; and this malformation may now be looked upon as a result of the arrested closure of the fissure of the choroid that normally exists at one stage of foetal development.

Under malformations of the cornea, Mr Wilde refers to an abnormal curvature of that structure—its vertical plane being more curved than its horizontal—which occasions irregularity of refraction, causing a point to appear a line, a circle an oval, etc. To this condition the term *astigmatism* has been given. It occurs in all eyes to a certain extent, but when considerable, it interferes materially with distinctness of vision. It is at present the subject of investigation by some Continental observers, Professor Donders in particular, who has found that it prevails as a cause of dimness of vision to a greater extent than was formally supposed.

The importance of a correct knowledge of this class of diseases is well exemplified by two cases narrated by Mr Wilde, in which congenital malformations of the iris were mistaken for symptoms of *iritis*, for which disease the patients were treated. In the one case there was a wart-like protuberance situated at the inner margin of the iris, projecting into the pupil; in the other the pupil was in an abnormal position, and preternaturally contracted. The fact that these, in the absence of any other symptoms of the disease, were considered quite distinctive of *iritis*, tends to show that a more extended acquaintance, not merely with the congenital, but other

affections of the eye, is much required among medical practitioners generally.

But although a knowledge of the congenital diseases of the eye is useful and important to all members of the medical profession, it is particularly so to the accoucheur, as all such affections come first under his notice, and from him will be expected an explanation of the nature of the disease, and its probable influence on the function of vision.

As the only work in the English language on this subject, and as one that will well repay perusal, we commend Mr Wilde's essay to the attention of our readers.



On Uterine and Ovarian Inflammation ; and on the Physiology and Diseases of Menstruation. By EDWARD JOHN TILT, M.D., etc., etc. J. Churchill: London: 1862.

Clinique Médicale sur les Maladies des Femmes. Par MM. BERNUTZ et GOUPIL. Tome Deuxieme. Chamerot: Paris: 1862.

THESE two works, although in many important respects very different from one another, are, on account of the similarity of pathological views brought forward and defended in them, placed appropriately side by side. They are both works of importance and interest to gynaecologists, and well deserve perusal. They are both long: that of the Frenchman extravagantly so. It is only a second volume of a great projected clinique, and in its 750 pages it discusses only two subjects, namely, *pelvi-peritonite* and *deviations uterines*. The work of Tilt contains 470 pages, and discusses three subjects, namely, menstruation and its diseases, inflammation of the uterus, and inflammation of the ovary.

The scope of Dr Tilt's book may be roughly stated, in few words, to be a proposal and defence of a new pathology of the common but indefinite uterine ailments. These uterine ailments have passed through several historical periods. In this country the chief have been the ulceration period and the displacement period. Dr Tilt has found the ulceration theory unsatisfactory, and the practice founded on it to be quite inefficient. The displacement theory he equally rejects, and believes the practice founded on it to be not only inefficient but dangerous to life. He brings the affections of the ovaries, especially those of a congestive or inflammatory kind, and the intimately connected affections of the circumambient and adjacent peritoneum into prominence, as the keystone of uterine pathology. We shall only say that nothing can be more unsatisfactory to the student and practitioner than the present state of the pathology of the (in one sense) minor uterine ailments, and we feel indebted to all honest labourers who struggle to bring medicine out of the slough.

On the Mechanical Appliances necessary for the Treatment of Deformities. By HENRY HEATHER BIGG. London: Churchill: 1862.

THIS volume is the second and concluding part of a work on the treatment of deformities, by an eminent surgical mechanist; the first part of which, "on the deformities of the lower limbs," has been already for some years before the profession. In this volume, deformities of the pelvis, spine, and upper limbs are discussed from the author's point of view. In the introduction we have a slight *resumé* of the former volume, and a claim on behalf of the "educated modern mechanist" to "rank as a member of a new profession." The amount of *education* necessary is defined to be "a more than slight acquaintance with the rudiments of anatomy, physiology, surgery, mechanics, and physics." The author then complains that, notwithstanding the very great attention paid by the profession to diseases of the spine, medical men have not paid a like attention to the subject of mechanical appliances, of which they have made "only one or two special forms the subjects of eulogy." He charitably accounts for this blindness by the suggestion that an impression evidently exists that "nature's loftier powers were the mechanism employed." He is all the more astonished at this, because surgeons have written treatises on the mechanical appliances to be used in clubfoot after tenotomy, clubfoot being very easily remedied; while they neglect entirely the mechanical treatment of *such distortions* (sic) affecting the spinal column, which not only fail to be ameliorated by this system of treatment, but offer the greatest possible amount of opposition and difficulty. Probably surgeons may say that the good results effected by the simplest mechanical appliance in clubfoot, and the uselessness even of the most complicated ones in spinal disease (the conditions of the two disorders being very different), are sufficient reasons for their approval of the one set of mechanical adjuvants, while they ignore or condemn the other. Believing, as we do, that in most cases of spinal distortion mechanical supports are useless, and in many positively injurious, and that our hopes of cure are based *solely* on a trust in "nature's powers," aided by rest and nourishment, we must still admire the care with which the author has described the various instrumental contrivances, many of which he has invented. Some of the machines, especially the foreign ones "for inclination, compression, and extension," by their names, and still more by the accompanying woodcuts, suggest rather painfully the tortures of the Inquisition; the one figured in p. 183 being a direct infringement of the patent of the rack in that time-honoured institution.

What will the lady physicians say to the insinuation conveyed in the following sentence? After describing the backboard collar, our author continues, "There cannot be the least doubt *but that* the ladies of the last generation owe their superiority of form very largely to the daily use of this simple mechanical arrangement."

On the Nature, Causes, Variety, and Treatment of Bodily Deformities.

Part I. By E. J. CHANCE, F.R.C.S.E., etc. London: Lemare: 1862.

IN this volume, we have the subject of bodily deformities treated from a scientific point of view. As a teacher of anatomy, as a surgeon of large experience, especially in this his favourite subject, Mr Chance has had very special opportunities, of which this volume shows he has amply availed himself. It consists of an introduction, and six lectures, with a short appendix. The introduction is an energetic, but rather bitter and one-sided defence of special hospitals, in which partisan spirit, and the too free use of italics, weaken still further rather feeble arguments.

In Lecture I., after a slight anatomical introduction, the author defines deformity, and discusses the division of deformities into groups, depending on—1. The period of accession; 2. The system operated on by the inducing cause, osseous, muscular, cutaneous, etc; 3. The nature of the deviation producing the deformity.

The remaining lectures are devoted to a very exhaustive discussion of the fourth division of the subject,—viz., the nature of the inducing cause: three lectures being taken up with the causes inducing congenital deformities in the ovum, embryo, and foetus, respectively; the last two discuss the causes of acquired deformities,—viz., scrofula and rickets, and the various diseases, injuries, and atrophies of the muscular, cutaneous, and ligamentous system. The most original and valuable portion of the work is the very scientific and philosophical inquiry into the causes of congenital deformities, especially the section in which many deformities are shown to be mere arrests of development, from persistence of some of the perfectly normal conditions of the embryo.

The numerous diagrams, though not remarkable for artistic merit, are intelligible, and give additional value to the work.

The second and more practical part of the work will doubtless be looked forward to with much interest.



Prolapsus, Fistula in Ano, and Hæmorrhoidal Affections: their Pathology and Treatment. By T. J. ASHTON. London: Churchill: 1862.

THIS little book is a partially rewritten selection from the author's treatise on diseases of the rectum, treating of the more common affections of that part in a more portable form than the larger work does. Without much pretensions to originality, this work gives a concise yet thorough account of the pathology and of the various plans of treatment of the diseases referred to. In the paper on fistula,

the vexed question of the formation of a fistula is discussed, and Mr Ashton agrees with both or neither of the distinguished surgeons with whose names this question is associated. He says: "Perforation taking place as often from the external surface of the intestine, as commencing on the mucous surface and proceeding outwards." In the treatment of fistula he condemns the ligature and injections as barbarous and useless, and acknowledging the great service of M. Ribes, in showing the invariable position of the internal opening, recommends as the safest, easiest, and only certain method, the incision by the probe-pointed bistoury, so familiar to the Edinburgh school. In the chapter on hæmorrhoids, he does not make the distinction sufficiently clear between an inflamed external pile, depending on a morbid growth of the skin or mucous membrane, and one depending on an inflamed condition of a varicose vein, as the slitting up, so suitable in the latter case, will be useless, perhaps even dangerous, in the other.

In his treatment of internal piles, our author has too great a dread of operative interference, or has great reason to be satisfied with medical treatment, for he says: "In the majority of cases it will not be necessary to interfere surgically with internal piles," if the patients attend to general and local treatment, which "will enable them to pass their lives in tolerable comfort."

He thoroughly condemns the cautery, actual or potential, and that "crushing, lacerating, and unscientific machine," the *écraseur*; recommends the ligature with the unqualified praise it deserves, though we regret to see a slight remnant of hankering after the nitric acid, in cases "where the part affected is of limited extent, and does not rise above the surrounding healthy surface."

On the Treatment of Gonorrhœa without Specifics. By J. L. MILTON. London: J. W. Davies: 1862.

AFTER an experience so vast, and so very special and practical as our author's has been (for he tells us that, "with his own hand, he must, on the lowest calculation, have given injections of nitrate of silver several thousands of times in gleet and spermatorrhœa"), we might have expected something very remarkable in the new plan of "treatment without specifics." If one of the three requisites for a remedy being a specific is, that the giver does not know how it acts, we fear the new treatment must still be, so far at least, a specific one, for it is—"chlorate and acetate of potash, and liquor potassæ, with sweet spirit of nitre added to rhubarb, with soap, blue pill, and hyoscyamus, with a good carminative over all, to prevent griping." All this is to be aided by injections of nitrate of silver, given by the surgeon, and of sulphate of zinc, administered by the patient himself.

The pathology is equally striking. In orchitis, "*stop the pain with morphia; with this the inflammation stops.*" The italics are our author's.

Mr Milton has discovered, however, a cause of orchitis. From a series of cases obtained in 1852-53, he finds that the numbers rise and fall in proportion to the electricity in the atmosphere, and that orchitis flourishes when the electricity is *negative and very active*. The introduction, or author's preface, is the best part of the book. Smarting, apparently under a previous, and doubtless well-merited castigation by the "Dublin Quarterly," he deprecates criticism, alternately by flippant invective against critics, and abject appeals to their mercy, at the same time pointing out to reviewers the melancholy position of the "Athenæum" and the "Saturday Review," as an example of what they may come to, if they don't "tak' thought and mend."

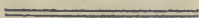


The Surgery of the Mouth, Pharynx, Abdomen, and Rectum, including Hernia. By THOMAS BRYANT, F.R.C.S., etc. London: Churchill: 1862.

THIS is the third part of a work on clinical surgery, based on the materials furnished by an experience of seven years and a half at Guy's Hospital.

On such a basis, a complete system is not to be expected, but the statistics furnished are of great value, and many most admirable practical remarks are given upon the series of cases. In the chapter on hernia we have tables showing the relative frequency of the different varieties of hernia, the frequency of the success of the taxis and of "herniotomy" respectively, and the question of whether or not the sac should be opened, and that in old and recent herniæ separately.

The tables given are valuable and useful, as the cases, though limited in number, have the advantage—so rare in statistics—of being collected by one man, out of the practice of one hospital, and for no special purpose. They are very much complicated, however, by the use of percentages, sometimes instead of, sometimes along with, the numbers.



Part Third.

PERISCOPE.

MEDICAL JURISPRUDENCE.

ON THE DETECTION OF BLOOD-STAINS. BY DR ERDMANN.

THE most recent investigations have shown that the crystals of hæmine discovered by Erdmann are the only constant elements of a solid judgment as to the nature of stains of a doubtful nature. There is no question but that blood-globules are characteristic of blood; but as in many cases the stains to be submitted to analysis are not recent, and as the red globules become altered with great facility, their presence cannot serve as an infallible criterion. As to the white corpuscles, Neuhauser has put in its true light the importance which has been recently attempted to be attached to them, by reminding microscopists that precisely similar bodies exist in urine, saliva, mucus, and it may be added in pus. On the other hand, a chemical examination cannot lead to a satisfactory result, because all the chief principles of blood are met with in other animal fluids, and in addition several vegetable albuminized matters present the same reaction as the albuminous elements of the blood.

Erdmann records a recent case which shows at once the insufficiency of a chemical examination, and the necessity which exists for an extreme reserve in all medico-legal microscopic researches. The only trace of an assassination committed at Leipzig was a brownish stain situated on the spot where the crime had been perpetrated; under the influence of rain this stain had assumed the appearance of coagulated blood. An aqueous solution of this stain furnished a reddish fluid, which gave, with tannin, with ferro-cyanide of potassium, and with Millon's solution, the same chemical reaction as the aqueous extract of dried blood. Examined under the microscope, the brown matter was found to contain some corpuscles similar to those of blood. But Erdmann having failed to discover crystals of hæmine, conceived doubts as to the value of the other characters, and repeated with greater care the microscopical examination; he then discovered that the bodies supposed to be blood-globules were the spores of an alga, which has been called the *Porphyridium cruentum* precisely on account of the resemblances of its spores to the globules of the blood.

Erdmann in the course of his subsequent researches has simplified the method of Brücke for obtaining crystals of hæmine, and has reduced it to the following steps:—He macerates the suspected stain in water and slowly evaporates the solution; he places this aqueous extract on one of the slips of glass used in microscopic examinations, and adds to it a minute crystal of common salt and a drop of glacial acetic acid; he exposes the slip of glass to a gentle heat over a spirit-lamp and evaporates to dryness; when the glass is cool he adds a drop of acetic acid, and places the whole under a microscope with a magnifying power of 250 diameters. If the stain contained blood, crystals of hæmine will infallibly be seen in the drop of acetic acid; these are rhomboidal plates arranged in groups around a central point; their colour varies according to their thickness from yellow to red; the special character of these crystals is their solubility in caustic potash. Erdmann maintains that by this method he has obtained crystals of hæmine from a stain of blood which could not be seen without a magnifying-glass.—*Zeitschrift für Analyt. Chemie*, II., 1862; and *Gazette Hebdomadaire*.

ON THE HÆMINE CRYSTALS IN DIFFERENT ANIMALS. BY DR WILBRAND.

WILBRAND has endeavoured to determine whether hæmine crystals from the blood of different species of animals can be distinguished by any crystallographic peculiarities. The following are the characteristic differences so far as they have yet been determined.

The crystals from human blood are lamellar-prismatic; that is to say, the crystals are thin, but relatively broad, the length being only from one and a half to three times the breadth. The crystals from the blood of the ox and the mouse are elongated-prismatic, being from six to ten times as long as broad. The blood of the ox and the mouse may, however, be distinguished from one another by the arrangement of the crystals. The first forms the model of a hexagonal axis-cross or parts of it; the latter of a monoklinometric cross or parts thereof. Accordingly, in the blood of the ox we find six-rayed stars formed from three crystals which intersect one another in a plane under sixty degrees. Such stars are not found in the blood of the mouse; but two forms of cross found in it are specific,—rectangular crosses formed from two crystals which present their narrow margins; and oblique crosses, the acute angles of which amount to rather more than two-thirds of a right angle. In addition to these kinds of blood, Wilbrand experimented on that of the sheep and the pig, but failed to find characteristic differences. The characters of the hæmine crystals from the blood of man, the ox, and the mouse, serve merely to distinguish them from those from the sheep and the pig.—*Vierteljahrsschrift für die praktische Heilkunde*.

ON THE ENTRANCE OF LIQUIDS INTO THE STOMACHS OF CORPSES.

BY DR LIMAN.

IN the first part of his work, the author studies in a general way the question of the entrance of liquids into the respiratory passages and stomachs of submerged individuals, and arrives at the same conclusions as those stated by Casper in his work on Medical Jurisprudence. In the second part of his memoir, Liman has endeavoured to point out all the importance of this question in certain medico-legal problems which concern the bodies of new-born children. When bodies already putrid are found in dung-heaps, in water-closets, and similar localities, and when the *docemasia pulmonum* shows that the respiration had been established, the presence of a specific liquid in the stomach often constitutes the sole clue to discovering the mode of death. The author reduces to two the causes which, in the great majority of cases, prevent the penetration of specific fluids into the stomachs of the corpses of new-born children; the first, and the most frequent, is the cadaveric rigidity of the *œsophagus*; the other is also a contraction of the *œsophagus*, but it results from the displacement of the stomach, which, yielding to the eccentric pressure exercised by the gases generated during putrefaction, is forced against the antero-posterior portion of the diaphragm. But, in spite of these obstacles, Liman maintains that it is not correct to say that the entrance of liquids into the stomach is impossible after death. After having alluded, in support of this assertion, to a case described by Wald, and to the experiments of Pappenheim, D'Albert, and Riedel, the author records the result of his personal experience in the case of the bodies of sixteen new-born children which had been buried for a longer or shorter time. In seven of these corpses Liman found in the stomach the specific material (sand, particles of clay, vegetable detritus); in fourteen these elements were found scattered over the *œsophagus*, the trachea, the pharynx, and the larynx; in two cases only were traces of penetration completely wanting. The author excludes from his assertions that, in favourable cases, liquids and specific materials *may* get into the stomach even after death. This *possibility* should be taken into consideration when the liquid found in the stomach constitutes the only ground for determining the cause of death of the infant.—Casper's *Vierteljahrsschrift für gerichtliche Medicin*.

ON OPTICAL DOCEMASIA PULMONUM. BY DR BOUCHUT.

IN determining whether or not the lungs of a new-born child have respired, considerable assistance may be obtained from the use of a good lens, or of a microscope magnifying from twenty to thirty diameters. In this way it may be positively determined whether or not respiration has taken place. If the lungs of a new-born child have breathed completely, we see by means of the instrument that their tissue is equally filled with numerous large, brilliant vesicles, having a diameter varying according to the magnifying power of the instrument, but which cannot be distinguished by the unassisted eye. When the lungs are those of a child which has not breathed, the characters furnished by the lens are quite different; the tissue is smooth and regular flesh like, and no traces of pulmonary vesicles can be discovered. The whole surface of the lung may be examined, but not a single vesicle will be found. On the other hand, if a lung has breathed imperfectly, or if the lobe of a lung which has not breathed has been inflated, we discover that there has been incomplete penetration of the air, that certain points contain pulmonary vesicles, while others present none.

A serious objection may be made to this method of docemasia pulmonum. It may be said, no doubt, at the moment of death, when the body has undergone no change, the lens may enable us to distinguish the lung of an infant which has breathed from that of an infant which has not; but in the case of bodies where incipient or complete putrefaction has taken place, is it possible to make the distinction? In the bodies of children which have been left for some time in water, in dung, or in the earth, can it be determined whether respiration had taken place? Here I shall be more reserved in my statements. Nevertheless, according to my observations, in the bodies of still-born children where respiration has not taken place, which have become entirely putrid by a prolonged sojourn in water, and where the whole body has become emphysematous by the production of the gases of putrefaction, the gases developed occupy the serous cavities of the peritoneum, of the pleura, of the pericardium, and the cellular tissue which separate the lobules of the lung, so as to form bullæ as large as the thumb, but there is none in the pulmonary vesicles. This fact has already been pointed out by several of our medical jurists. It follows from this that, in a still-born child which has not breathed, and the putrid body of which is filled with gas, air may be found everywhere but in the air-cells, and in this case examination of the lungs with a lens does not enable us to discover a single pulmonary vesicle filled with air. Nevertheless, I repeat, these researches ought to be followed out by additional observations.—*Gazette des Hôpitaux*, No. 92, 1862.

POISONING BY NITRATE OF STRYCHNIA, ACETATE OF MORPHIA, BITTER-ALMOND WATER, AND CHLOROFORM. BY DR TSCHEPKE.

On the 26th of November, a little before eleven in the evening, Dr Tschepke was summoned to see E., a druggist's assistant, who had voluntarily poisoned himself. He was found in bed, pale, the eyes closed, stiff as a corpse. One of those present showed a phial containing nitrate of strychnine, which the young man had employed. Dr Tschepke took hold of the hand in order to feel the pulse; immediately on this simple contact the body was affected as if by an electric shock; the pulse became scarcely perceptible; the respiration was suspended. At the end of a few minutes the patient opened his eyes, and, in reply to a question, stated that he had taken strychnia. Whilst an emetic, consisting of antimony and ipecacuanha, was being prepared, spontaneous vomiting occurred of a reddish matter, having the smell of bitter almonds. The emetic was administered, and a solution containing three grains of tannin in each dose was prescribed. The emetic produced two copious discharges, after which E. scratched his face and body violently, and tore his hair; then supervened starting, clonic convulsions, tetanic rigidity, opisthotonos, and suspension of the pulse and of the respiration. Touching the arm produced, as at first, a

fresh attack. The tannic acid and the emetic were given every alternate quarter of an hour. Vomiting and cramps succeeded one another; the same train of symptoms recurred. At the end of an hour the patient was able to speak, and stated that he had first taken strychnia, then acetate of morphia, each of these substances in an ounce of bitter-almond water, and that he had poured on his pillow a certain quantity of chloroform.

Half an hour after midnight the use of the emetic was discontinued, and three grains of tannic acid, with a quarter of a grain of codeine, were given every half-hour. Occasional vomiting and cramps recurred until four o'clock in the morning. There was still great anxiety, feebleness, and dryness of the throat; the respiration was short and hurried. To allay his thirst, he was ordered milk of almonds, milk, tea, and finally seltzer water. Urination was painful.

In the morning the patient was sufficiently recovered to narrate what had taken place. At half past eight o'clock he had taken between eight and ten grains of the nitrate of strychnia in an ounce of bitter-almond water. A little later he swallowed an additional dose of twelve grains of strychnia. Feeling nothing particular, he took at nine o'clock ten grains of acetate of morphia dissolved in an ounce of bitter-almond water, and then lay down in bed. Ten minutes later he recollected that he had some chloroform; he poured some of it on his pillow to hasten his death. It appears that he was insensible for an instant, and then felt in the nose and the limbs an intolerable itching. Feeling no effect from the poison, he wished to get up to look at his watch, but was unable to do so. He remained in a state of partial insensibility till the arrival of a fellow-assistant at about a quarter to eleven. He heard him enter; and as the latter was leaving the room to get assistance, he was seized with violent cramp, with cessation of the respiration, but without pain. He then lost consciousness, but only for a short time; and when he came to himself, had another attack of convulsions. At this moment the physician entered, and made the observations already noted. Two days afterwards no trace of the poisoning remained.

The various symptoms in this remarkable case may be referred to the different poisons. To the strychnine must be referred the cramps, the violent movements of the body on the slightest touch, and the phenomena of asphyxia. To the morphia belongs the itching of the nose, of the limbs, and, later, of the whole body. The bitter-almond water and the chloroform appear to have produced no special effect.

We may well be surprised that such large doses of strychnia did not cause death; but this is to be accounted for by the following circumstances. The young man, before poisoning himself, had partaken freely of a sort of soup made with flour and a species of cranberries. These latter contain tannin, an agent which neutralizes strychnia; and the farinaceous matters, by enveloping the poison, had prevented its absorption.

On the other hand, opium has been found to be an antidote to strychnia; so that the mixture of poisons which the poor creature had taken to hasten his death had had precisely the opposite effect. It is right to add that the emetics, continued without interruption during several hours, no doubt had a considerable effect in bringing about this fortunate result.—*Deutsche Klinik, and Gazette Médicale de Paris.*

ON POISONING BY STRYCHNIA. BY DR DURIAU.

IN 1856, when all England was roused by the poisoning of Cook by his friend Palmer, a real struggle took place amongst the most respectable medico-legal authorities in Great Britain, the physical proof of poisoning being wanting, as Professor Taylor had only found traces of antimony in the viscera of the deceased. The most various opinions were enunciated, and that in the presence of strychnine convulsions having been recognised in the victim.

Shortly afterwards, there appeared in the *Annales d'Hygiène et de Médecine Légale* a very remarkable article by M. Tardieu. This eminent medical jurist

did not hesitate to conclude "that in the absence of all material and positive demonstration of strychnine, which may not be obtainable, the characteristic symptoms observed during life, joined to the lesions observed after death, are sufficient to establish the presence of the poison." In fact, it is impossible for a medical man who has once seen the symptoms produced by strychnine to hesitate as to their nature.

The following observation confirms the views of M. Tardieu :—

An error in dispensing—the pupil of a chemist having substituted a *decigramme* (2 grains) for a *centigramme* (about $\frac{1}{100}$ th grain) of strychnine to be made into ten pills—gave rise in a woman, thirty-eight years of age, ten minutes after the ingestion of the strychnine, to convulsions and complete loss of consciousness. These convulsions lasted two or three minutes; they were separated from one another by an interval of one or two minutes, and terminated constantly in a muscular rigidity of the whole body, and especially of the lower extremities. The patient struggled and endeavoured to get out of bed; a tetanic contraction intervened, and suspended her efforts. Each access commenced with a slight trembling analogous to the shivering of fever, which, communicating itself gradually from the extremities to the trunk, was replaced by clonic convulsions and the characteristic rigidity. Deglutition became impossible, the temperature was elevated, perspiration was abundant. This state persisted for seventy-two hours; then the patient recovered consciousness, but very slowly. But during six weeks a burning sensation extended from the epigastrium to the pharynx, and the stomach refused to retain any aliment, solid or liquid. She was only nourished by a *teaspoonful* of soup and cold milk. The treatment consisted in blood-letting. It was necessary at all hazards to prevent suffocation; the congested condition of the face and the stiffness of the neck appeared to indicate this mode of treatment.

The experiments of Dr Harley on the blood of animals poisoned with strychnine confirm the utility of the bleedings employed in this case. Dr Duriau concludes with the following propositions :—

1. In poisoning by strychnine it is not uncommon to find anatomical lesions of the stomach.
2. Though not offering a specific and constant character, these lesions are of an inflammatory nature.
3. They are evidently produced by the action of the poison on the gastric mucous membrane.
4. They should never be neglected in a medico-legal inquiry; for, joined to the symptoms observed during life, they will lead sometimes to the suspicion of poisoning.—*Gazette des Hôpitaux*.

FAT AS AN ANTIDOTE FOR POISONING BY STRYCHNIA.

BY DR F. RIENDERHOFF.

It is well known that in poisoning by strychnia and its salts, recovery can scarcely be expected so soon as tetanus has made its appearance; that this may manifest itself in men within five minutes after the administration of half-a-grain of a salt of strychnia; that it is generally present within twenty minutes; and that the fatal result generally follows in from a few minutes to two hours. In cases of such terrible rapidity, in which unfortunately there is generally no time for the employment of therapeutic means, it would be in the highest degree important to possess an antidote procurable at all times and in all places, and possessing the not trifling advantage of being in itself perfectly innocuous. On this account, and encouraged by the favourable results of Blondlot's experiments on the use of fat in poisoning by arsenic, Dr Rienderhoff made use of the same substance in the case of about thirty dogs and rabbits to which he administered strychnine. The rabbits were poisoned with a solution in water of acetate of strychnia, injected into the stomach; in the case of the dogs the strychnia was worked up with a drop of water into a bread-pill. The results arrived at were the following :—

1. The absorption of strychnia and its salts is impeded by the administra-

tion of fat (hog's lard), butter, or oil; this effect is more striking in the case of fat than of butter, and least of all in the case of oil. The time so gained must be utilized for instituting a regular treatment.

2. The course of the symptoms, after the appearance of the first cramps, is rather shortened than lengthened by butter and oil; therefore lard has an advantage over butter, and this over oil.

3. The presence of fat, butter, or oil in the stomach also delays the operation of an emetic. The emetic must therefore be given in relatively large or in repeated doses, but the use of the stomach-pump is preferable when fat has been administered; under these circumstances, the fluid employed to wash out the stomach would naturally be oil.—*Archiv für die Holländ. Beiträge zur Natur. und Heilkunde.*

ON POISONING BY SULPHURIC ACID. BY ANTONIO COZZI.

THIS interesting monograph is founded upon the study of twelve cases of poisoning by sulphuric acid observed by the author at the Hospital of Santa-Maria-Nuova, at Florence, between the month of February 1852 and January 1861. With one exception, all the poisonings were the result of attempts at suicide. The analysis of these observations has led Cozzi to the following conclusions regarding the objective and subjective symptoms which follow the ingestion of the poison:—

1. The fluids discharged by vomiting are generally as black as ink; in some cases they have been sanguinolent.

2. It sometimes happens that the phenomena of spasm and irritation, determined by the caustic substance, predominate at first in the situation of the pharynx, and that epigastric pain only comes on later; under these circumstances death occurs suddenly, before anything causes the physician to suspect its imminence.

3. Entering the larynx and bronchi, the sulphuric acid may develop a fatal inflammation, and determine grave disorders in the organ of voice. The penetration of the acid into the air-passages is due to the instantaneous impression which it produces upon the tongue; the spasmodic contraction of the pharynx prevents deglutition, at the same moment an access of cough occurs, and in the succeeding inspirations the liquid falls into the trachea and bronchi, and may even enter the lung.

4. When the degree of concentration and the dose of acid swallowed are sufficient, an immediate perforation of the stomach may take place; in this vomiting and diarrhoea are absent. In this case also the swallowing of liquids increases the pain; the pulse becomes thready, the prostration is complete, the limbs are covered with a cold sweat, and death occurs in a few hours, the patient retaining consciousness to the last.

5. If the acid is weak and much diluted, the general symptoms are at first less severe, the local accidents predominate, but may themselves present a slight remission; but an inflammatory reaction soon sets in which carries off the patient. In other cases, nervous symptoms and grave disorders of the assimilation manifest themselves; the patient cannot regain strength, and after prolonged suffering he expires, either from a chronic gastro-enteritis, from ulceration of the stomach, or from a stricture of the œsophagus or of some other part of the digestive tube.

6. Sulphate of indigo probably possesses toxic properties as intense as those of pure sulphuric acid.—*Lo Sperimentale*, and *Gazette Hebdomadaire*.

Part Fourth.

MEDICAL NEWS.

PROCEEDINGS OF THE EDINBURGH OBSTETRICAL SOCIETY.

SESSION XXI.—MEETING II.

November 27, 1861.—Dr KEILLER, *President*, in the Chair.

I. ON THE USE OF THE FORCEPS IN TEDIOUS LABOUR.

Dr Hamilton of Falkirk made a communication on this subject, and began by explaining that he had first been led to the publication of the results of his obstetric practice in consequence of a statement respecting the mortality of forceps cases, contained in a review of Dr Murphy's work in the *British and Foreign Medico-Chirurgical Review* for October 1852. When he (Dr H.) was first about to commence practice, he had been greatly struck by the observation made by Dr Reid, who had probably been known to many of the Fellows present as a skilful and experienced accoucheur, to the effect that forceps might be used in cases of tedious labour much more frequently than they usually were, not only without danger to the patient but to her advantage. Having found other trustworthy practitioners of the same opinion, he (Dr H.) had acted on the hint, and from the time when he first began to practise, in 1833 up till 1852, he had employed the forceps in a large proportion of cases of labour, and the results of his experience had only confirmed him in his opinion of their safety and usefulness. He had then been astounded at seeing the statement of Dr Murphy as to the great fatality in forceps cases; and having himself been under the impression that the use of the forceps was rather gaining ground, he had determined to investigate the correctness of conclusions so entirely opposed to those he had himself arrived at. "The question," as he had stated in a paper he then wrote on the subject, "to be discussed is presented to us in a condensed form at p. 422 of the *Review* referred to, the general conclusions deducible from the statistical facts collected by Dr Murphy being—1st, That in the forceps deliveries occurring in 78,892 midwifery cases, in the hands of British, French, and German practitioners, nearly 1 in every 4 of the children was still-born. 2d, That, in protracted labours, 'so far as the children are concerned, the proportion still-born is very much the same, whether the forceps be employed or not; the difference, if any, being in favour of leaving these cases to nature.' 3d, 'That the use of instruments is to be discountenanced in all but exceptional cases of this kind, in which the habit of the patient is too feeble to admit of her enduring a protracted labour without risk of exhaustion.' 4th, That Ramsbotham employed the forceps once in 729 cases, Joseph Clarke once in 742, Collins once in 684, Kilian once in 78, Carus once in 14, Siebold once in 9; and 'Dr Murphy's recommendation is to employ them only in cases of positive arrest,' unless dangerous constitutional symptoms are present." As opposed to this high mortality from the use of the forceps, he (Dr H.) had adduced the results of his own practice, and had stated that, whilst using the forceps in every seven or eight cases of labour, he had delivered 316 children, all of whom had been born alive. He had subsequently published an article in the *Edinburgh Medical Journal*, claiming for the use of the forceps the same continued immunity; and now he could point to 731 children consecutively born alive, in the delivery of from 90 to 100 of which the forceps had been employed. He (Dr H.) thought that this startlingly favourable result indicated that the mortality which was usually attributed to the employment of the forceps was rather due to the delay in their application. He believed his prac-

tice represented very fairly that of a general country practitioner; though perhaps now that he had acquired more experience the proportion of difficult cases coming under his care might be somewhat above the average, and he now found that cases which he once thought dangerous and difficult became comparatively easy, simply from his constantly following out the principle of not delaying too long the application of the forceps. Remembering the great law that the mortality in parturition increases with the duration of the labour, and believing that the danger was greatest in those cases where the delay occurred during the second half of labour, he was always anxious to shorten this stage by every means compatible with the safety and well-being of the patient and her progeny. The first stage might go on for many hours, sometimes for days, without involving the patient in any risk, and he almost never in any case interfered until after the completion of the first half of labour. But even in an otherwise apparently normal case, if the child's head remained longer than two hours in the maternal pelvis, and the pains were at all severe, he then believed that the child's life was becoming endangered, and he never hesitated in applying the forceps. He had now employed the forceps in about 200 cases, and found no danger whatever if the head had not been allowed to become impacted. He employed the forceps in most cases as a direct extractor, but in some cases also to rectify the position. In one patient he had found it necessary to employ the forceps in nine out of her twelve confinements, although her pelvis was sufficiently roomy, in consequence of the foetal head failing to make the necessary turn in the pelvis. And now he might be allowed to state what he did not do. In the first place, he now almost never used ergot of rye in any midwifery case. He had rarely at any time employed it as an adjuvant in the first stage, and latterly he had also refrained from administering it during the second portion. He had no prejudice against the drug, but he had never been able to see that it fulfilled any good indication during the first stage of labour, and gradually he had come to give up its use altogether, so that he had not administered it to one out of his last 400 parturient patients. Secondly, he never greased the forceps, as in lectures and text-books we were instructed to do. He thought the greasing unnecessary, because there is usually no difficulty in introducing the instrument, and the unguent interfered with the firm hold of the foetal head, which was necessary to permit of due tractile force. When he first went to Falkirk he had attended a case along with an old practitioner, where the patient was delivered of twins, both of which were born dead after a tedious labour. On Saturday last he had attended a case of precisely the same kind, where he did not doubt that he would have had the same unhappy result of producing two still-born children, had he not extracted the first child with the forceps after its head had been but a short space of time on the perinaeum: as it was, both children lived. He had described a case where he could not get the head of the child brought into the pelvis in a right direction, and where, after long-continued efforts with the forceps to rectify the position of the head had failed, in consequence of its always turning round again, he thought from the opposition presented by the rectum, he had at last to perforate the head and deliver by craniotomy. He had recently met with a similar case, where the head lay in the left oblique diameter occipito-anteriorly, but could not be brought down into the pelvis until he had turned it by means of the forceps through three-fourths of the circle of the pelvic brim, so that at last it presented occipito-anteriorly in the right oblique diameter.

Dr Keiller thought this one of the most important communications that had for some time been made to the Society. The propriety and safety of instrumental interference in all cases very much depended on the experience and tact of the operator; and there could be no doubt that, in properly selected cases, the careful application and proper use of suitable forceps materially tended to diminish suffering and death. He (*Dr K.*) had been in the habit of specially referring to *Dr Hamilton's* views and practice in regard to the frequent use of the forceps. The condition of the patient, and the position as

well as the condition of the child, ought to form our most important guides in instrumental labour. It would be interesting to know what kind of forceps Dr Hamilton was in the habit of using, and what place the head usually occupied in the pelvis when they were applied, as the difference between long and short forceps, and the cases in which they were applicable, was in many respects very material.

Professor Simpson regarded Dr Hamilton's statements as to the safety of the forceps in labour as of much interest, and considered them as extremely valuable in tending to confirm the great general conclusion which was forced on us by the study of Collins' statistics, and which all carefully collected data go to establish, viz., that the danger of parturition in tedious cases does not arise from the employment of any kind of operation, so much as from the long duration of the parturition itself. In the Dublin school they had usually maintained an opposite doctrine, and had taught that labour should not be interfered with till the child had died. Thence, of course, the safest operation for the mother was craniotomy, and the forceps were almost never employed. When the late Dr Beattie adduced statistics in favour of the use of the forceps in labour, Dr Clarke, then master of the Rotunda, had, it was said, replied by sending him a challenge to fight a duel. He (Prof. S.) had never doubted that the chief danger from delay began when the first stage was completed, and an arrest of the labour took place when the fetal head had begun to be compressed in the maternal canals; but it was quite impossible to bring this out in any statistical table, as data enough were not to be had. When it became necessary to shorten the labour he believed that it did not matter very much whether the operation had recourse to were extraction by the forceps or version, that it was the speedy delivery of the patient from all her sufferings and struggles, and not the special kind of operation, that was her source of safety.

Dr Figg agreed with Professor Simpson in his last observation, and could adduce the same kind of evidence in favour of turning as had been brought forward by Dr Hamilton in favour of the forceps operation, viz., an unusual number of deliveries effected without any attendant danger or mortality.

Dr Hamilton maintained that the forceps was preferable to turning, because he had seen several children born dead where the latter operation had been employed, and in one case the vertebrae of the neck had become dislocated whilst the child was being extracted, so that delivery could not be completed until the fetal head had been opened. He always used Ziegler's forceps, and usually applied them after the head had descended so far into the pelvic cavity as to allow the tip of the ear to be easily felt by the finger. In reply to a question put by Dr Moir, Dr Hamilton repeated that he had not had a single still-birth among 731 children that he had delivered successively; and in reply to a question by Dr Figg, he (Dr H.) explained that although he had delivered some children that died very shortly after birth, yet he did not count a child still-born if it continued to breathe, if only for five minutes.

Dr Cochrane thought that perhaps the great mass of the children whom Dr Hamilton thought he had saved by the use of the forceps might have been safely enough delivered by the natural process. He (Dr C.) had delivered many thousands of cases, many of which were forceps cases, and the proportion of deaths was very small.

Dr Hamilton replied that the results of operative procedure in parturition in the hands of some practitioners might be more favourable than they were generally represented to be in books; but he could only say that he had looked very carefully into all the statistics he could find, and the most favourable returns he had been able to discover were those of Dr Lawrence, Montrose, and he lost one in forty-six cases.¹

¹ NOTE BY DR HAMILTON.—See on this subject, "On the Mortality from the Use of the Forceps," by Dr H., in Brit. and For. Med.-Chir. Rev. for April 1853. At that time, most obstetricians seem to have been inclined to interfere mechanically as little as possible in merely tedious labours. Since then I have no doubt that the infantile mortality in such cases will be found to have greatly decreased (though I have not seen returns showing this), and

Dr Moir believed that the great danger to the mother arose from the delay in the performance of obstetrical operations so soon as their necessity was established, as had always been the doctrine of the Edinburgh school. With regard to the use of ergot he would add that *Dr Hamilton* had first studied obstetrics under a professor—Professor *Hamilton*—who used always to speak very strongly against its employment. He (*Dr M.*) thought *Dr Hamilton* was probably the only practitioner in the world who had delivered 731 women without having a fatal case.

Professor Simpson stated that his friend *Dr Arthur Mitchell* was at present engaged in the preparation of statistics, which would show how frequently idiocy was due to compression of the head of the child with the forceps during its birth, and which he hoped to be able to bring under the notice of the Society.

II. ARREST OF HÆMORRHAGE FROM THE GRAVID OR DISEASED UTERUS.

Dr Hamilton exhibited the small india-rubber ball, with a tube attached to it, with which he was in the habit of arresting uterine hæmorrhage. He thought it peculiarly suitable in cases of hæmorrhage from a carcinomatous or ulcerated or injured cervix, or in connexion with abortion. If the bleeding proceeded from the bottom of any depression he was in the habit of first introducing a small pledget of lint to the spot, and then passing the air-ball up to it, while, by means of tapes tied to the tube as it projected from the vulva, and fastened round the patient's body, a steady equable pressure could easily be kept up of sufficient force to check the flow. In cases of placenta prævia he thought a modification of the same apparatus might be useful. He had not had any opportunity of trying this modified instrument, but he had, instead of a ball, a cup fixed on the end of a stem. This cup he proposed, in the next case of placenta prævia that came under his care, to apply to the os uteri so as to compress it, and then he thought that by pressure applied to the stem he would be able to check the bleeding.

Dr Keiller feared that it would be impossible to exert pressure with the compressible ball which *Dr Hamilton* had exhibited sufficient to control the hæmorrhage in many cases. He (*Dr K.*) did not see that it possessed any advantage over the distended caoutchouc bag which he had described and used with great success in many forms of uterine hæmorrhage, and which he had found serviceable as a plug and dilator in cases of placenta prævia.

Dr Hamilton had tried the air-bag, but found it to fail, because the bag often escaped and allowed of the return of the hæmorrhage.

Professor Simpson thought we had an almost infallible means of controlling hæmorrhage from a bleeding cervix uteri, in the application of perchloride of iron.

III. POST-PARTUM HÆMORRHAGE.

Dr Hamilton said that in the treatment of post-partum hæmorrhage his practice was to clear out the clots from the interior of the uterus, and then to compress the uterus between the two hands. To produce effectual compression he introduced one hand into the vagina and applied it along the back wall of the uterus, and by then applying the other hand on the abdomen he could keep

for, I believe, the very sufficient reason, that the use of the forceps has increased in something like a corresponding ratio. For example, in the returns referred to, the forceps are stated as having been used in Dublin in the ratio of once in 684, with a mortality of 1 in 17; at the Edinburgh Maternity, once in 472, with a mortality of 1 in 22; and by *Dr Lawrence*, Montrose, once in 120, with a mortality of 1 in 46; whereas *Professor Simpson*, at the close of the present discussion, stated that he now uses them in probably every fifteenth or twentieth case.

I have stated in the article referred to, and in the *Edin. Med. Jour.* for May 1855 and October 1861, that, in order to obtain the true rate of infantile mortality from the labour process, in my hands, I included in my series only cases where I attended from the first, and excluded all children non-viable or already dead, which no doubt gives me certain advantages. Making ample allowance, however, for such advantages, the results in the comparisons I have made will be but little affected, when we have on the one side units or tens, and on the other hundreds.

the uterus flattened between the two hands for ten minutes or a quarter of an hour, or three quarters of an hour, or till such time as all tendency to the recurrence of the hæmorrhage had ceased. The uterus could be felt between the two hands like a collapsed India-rubber bottle, and the front and back walls could be held in most accurate contact. He had followed the practice, and that of grasping the mouth of the uterus, for above twenty years, and never saw a case where he could not at once and effectually check the flooding after delivery.

Dr Moir stated that, in ordinary cases of post-partum hæmorrhage, their teacher, the late Professor Hamilton, had been in the habit of recommending a nearly similar procedure, namely, the simultaneous grasping of the cervix uteri in one hand, and compression of the fundus with the other; and in many cases he (*Dr M.*) had treated flooding in this way with the happiest results. But sometimes it failed; and he remembered one case in particular, where, after persevering with this kind of treatment for four hours, he was at last obliged to have recourse to the intra-uterine injection of cold water.

Professor Simpson remarked that the practice recommended by *Dr Hamilton* was attended with this drawback in some cases, that the introduction of the hand into the vagina was occasionally so painful that the patient rebelled against it. In one case the patient would not submit to the introduction of the hand except on condition that she were kept under chloroform. He preferred to compress the uterus through the abdominal walls, and found them so relaxed that he could easily pass one hand behind and the other in front of the organ so as to compress it between them.

IV. NEW TRANSFUSION APPARATUS.

Dr Hamilton exhibited an apparatus which he had contrived for the performance of transfusion, and gave the following account of it:—

The method of treating post-partum hæmorrhage, which I have described in the last October number of the *Edinburgh Medical Journal*, furnishes to the practitioner a simple, and, as far as my experience for upwards of twenty years in its use enables me to speak, a certain and immediate means of restraining this affection. I have said, however, that even where this is done at once and effectually, death may take place from the drain of blood having already been so great, or so rapid, that the system is unable to rally, notwithstanding the use of all the common appliances. Two years since, I met with a painful case of this kind. Returning from the country about two o'clock one afternoon, I was told that urgent messages had been left for me to see a patient in the town, whom I found with all the usual symptoms of extreme depression from flooding. A midwife had delivered her some hours previously, and a brother practitioner in my absence had also seen the woman. I instantly extracted from the uterus a moderate-sized clot of blood, and applied compression with both hands, in the way I have explained in the article referred to, so that I was certain no more blood was lost. Notwithstanding this being done, and also pouring into the patient an abundance of stimulants, the urgent symptoms continued to increase, so that about 3 P.M. her case was becoming desperate. I therefore resolved, with the assistance of my professional brother, to attempt staying the fatal result by transfusion. My transfusing apparatus was not in such exact working order as to give me perfect confidence in operating with it; and, while getting this remedied, about half an hour was lost, and the patient sunk. I have seen and heard of a good number of such cases in my own neighbourhood, and quite recently a lady under my care very nearly lost her life from an insidious flooding of about four hours' duration. These distressing cases determined me, when next similarly called upon to act, to have my transfusing apparatus in working condition, and especially to have the syringe in such a state as to secure me from the risk of pumping air, instead of blood, into the patient. I was not very much encouraged by the trials I made on this subject, and I at first thought of connecting with the tube leading from the syringe a glass trap, to catch bubbles of air, if they should by accident get mixed with the

blood; and, thinking more upon the subject, I asked myself whether there existed any necessity for a syringe at all. The result was, the construction of the simple little instrument which I now exhibit. It consists of a funnel for receiving the blood, say four inches broad at the mouth, with a stop-cock attached to it; of a small tube, for introduction into the vein of the patient, also having a stop-cock attached to it; and of an india-rubber tube, two feet long, for connecting the two. In operating with this instrument, I propose that the patient should be placed at a lower level than the person from whom the blood is to be drawn, so that we may have, 1st, the force of gravitation to impel the blood forwards; and, 2d, that we may thus effectually provide for the non-entrance of air into the veins, as the air, being the lighter body, must always keep on the surface. In order to test the practical working of this instrument, I got two dogs, upon which I performed a few experiments. Having heated the instrument, by pouring warmish water through it, in the first experiment I opened the jugular vein of the dog from which the blood was to be taken, and allowed the blood to issue from the tubule before this was introduced into the same vein of the other dog. I did this in order to expel the air, but found that, during the time thus lost, the blood in the funnel and tube had coagulated. In my next experiment I avoided the chance of this happening, by filling the tube and the lower portion of the funnel with warmish water, introducing the tubule into the vein, and then opening the vein of the dog from which the blood was to be drawn. In this way a small quantity of the blood ran off, but still coagulation took place too rapidly to make the experiment satisfactory. In my third experiment I used simply luke-warm water, and I then found I could with ease inject any quantity I desired. I now tried the action of the apparatus with human blood. I first filled it, as before, with luke-warm water, and shut the stop-cocks; and, just before opening the vein of the patient, emptied out the whole except what remained in the tube and bottom of the funnel, which I afterwards found amounted to about two drachms. As soon as two or three drachms of blood had been drawn, I opened both stop-cocks, and allowed it to run off, and I found that it ran in a continuous stream into a plate, until I had obtained the quantity I wished to abstract, viz., about eighteen ounces. I found that, by regulating the stop-cock connected with the funnel, I could, with great ease, keep only a few drachms in the funnel, thus making the transfer from the patient to the plate almost immediate. I repeated this experiment, with exactly the same result: the blood in the plate presenting next day, as far as I could judge, precisely the same appearance as if it had been drawn direct from the patient. I find that water falls through the whole length of the tube in about $2\frac{1}{2}$ seconds, and an ounce of water runs off from the funnel in 8 seconds, so that the exposure of the blood, where the stream is kept continuous, must be very trifling, and probably will be found, when the instrument used is made entirely, or chiefly, of non-conducting materials, neither to lower its temperature much, nor to alter unfavourably its vital properties. Combining the results of the two sets of experiments, there seems to be little reason to doubt that transfusion of blood, or injection of water or other fluids, might with ease be effected with this instrument in the human subject, or in animals. Transfusion with dog's blood is much more difficult than where human blood is employed. Dr Blundell found that the first coagulates in 10 seconds, whereas the latter takes 60 seconds to coagulate; and hence, no doubt, the reason why he employed human blood to transfuse into dogs.

My feeling is, that many lives are annually lost, in obstetric practice alone, from loss of blood; and, looking at the recorded cases I have seen in which transfusion had been employed, it seems to me that they offer great encouragement to its more frequent use. The great obstacles I think hitherto to using it have been, the complexity and expense of the apparatus used, the dread of introducing air in dangerous quantities into the veins from the use of the syringe, and timidity on the part of the surgeon, from want of dexterity or want of practice, in performing the operation. If my anticipations be correct, such an instrument as I have exhibited may remove the two former obstacles,

for it is so simple, that it can with the greatest ease be cleaned and kept in order; it will cost only a few shillings, and could therefore be in every practitioner's possession; and, with the most ordinary care, it renders impossible the entrance of air into the veins. As to the third obstacle I have mentioned, practitioners could easily remove it by performing a few experiments on dogs, with water instead of blood: the injection of a moderate quantity at a proper temperature apparently doing them no harm. I will only add the usual caution given in these cases, that the experimenter be careful to expose properly the vein before incising it, otherwise he will run great risk of injecting the fluid into the cellular tissue, instead of the vein. I was assisted in my experiments by Mr Heriot, veterinary surgeon, Falkirk, who secured the dogs, and applied the ligature to "start" the vein. After shaving off the hair, I pinched up the skin over the vein with my left thumb and forefinger, made an incision with a sharp curved bistoury in the course of the vein, gently dissected the cellular tissue from the vein, and then opened it.

After I had made the experiments I have detailed, I found, on consulting Dr Blundell's paper on Transfusion, and his Principles of Midwifery, published in 1839, that he also had the idea that an instrument of a simple kind might be used in transfusion instead of the syringe, but, curiously enough, he seems never to have constructed or employed it. In his Principles of Midwifery (p. 255), he says, "transfusion from artery to vein, or perhaps even from vein to vein, might be accomplished by tubule simply;" that is, as I understand it, by connecting the two together; and again, "a fall of two or three inches, perhaps less, is sufficient to move by gravitation the blood into the vein." Dr Blundell proposes to call this a "gravitator," and the name seems a very appropriate one both for his and my own instrument. Instead of two or three inches of a fall, however, I think that in my instrument great advantage will result from having the india-rubber tube two feet in length, as this both gives facility in adapting the instrument, and furnishes no more than enough of gravitating power for propelling the fluid, as a substitute for the syringe. It seems to me, however, that quite sufficient force can be thus acquired for what is wanted, of a kind, too, somewhat like the equable gentle force employed by nature in the venous circulation; and that, until coagulation takes place, there need be little fear of the flow of blood keeping continuous. If coagulation has taken place, any exertion of force with a syringe or otherwise would only, I think, be likely to do harm, by propelling coagula into the veins. In such a case, much the best plan, I think, would be at once to remove the instrument, clean it out, and re-apply it.

In transfusing in the human subject, I would be inclined to proceed in the same way as I did in my second experiment on the dogs. Filling the instrument with water of the proper temperature, and introducing the tube into the vein of the patient, before the supplying vein is opened, will both prevent any material abstraction of heat from the blood, and will also obviate the risk of coagulation, should any unexpected delay occur. The two drachms of water that would thus be first introduced into the veins, would probably be beneficial rather than otherwise.

In the instrument I have used, the two stop-cocks and the tube to introduce into the vein are metallic; but Messrs Thornton inform me, that these, as well as the funnel could, be made of vulcanite, one of the best materials I know of for such a purpose, being both a good non-conductor of heat, and little liable to alteration of its surface. Any one wishing to possess such an instrument may obtain it by applying to Messrs Thornton, India-Rubber Warehouse, Princes Street, Edinburgh.

V. INFANTICIDE.

Dr Hamilton showed a preparation of a parietal bone with a small perforation in it, and gave the following history:—The preparation which I have exhibited is part of the left parietal bone of a new-born child, whose body was found in a dunghill at Barley-Hill, near Falkirk, in November 1859. Ann

Loney or Kelly, who admitted being the mother, in her declaration stated that the child was premature, and had been still-born. The body was examined by Mr Girdwood, surgeon, Falkirk, and myself. We were clearly of opinion that the child was at, or about, the full time, had breathed freely, and had met its death from the infliction of this penetrating wound of the scalp, skull, and brain, along with probably some smart strokes on the other parts of the head, but we were unable to say positively that these could not have been inflicted while the child was *in transitu*, and not fully separated from the mother. The consequence was, that the mother stood her trial at the Stirling Spring Circuit of 1860, for concealment of pregnancy, and was sentenced to twelve months' imprisonment. Could she have shown that previous to its birth she had mentioned to a single person that she was with child, she would, no doubt, have escaped even this punishment. The profession has lately seen and heard a great deal on this subject. I believe the course pursued in this case has been that usual, for a good while past, with the law-officers of the Crown,—viz., indicting for concealment of pregnancy; while the crime of infanticide *in transitu*, so far as I know, seems rarely, if ever, to have been brought before our criminal courts; although it naturally, one would think, should be the minor charge (if indeed it can be called minor), failing proof of the major one of murder *after birth*. On the legal technicalities of this question it would be presumptuous in me to say anything. I may observe, however, that the requirements of the law in such cases have placed the medical witness in a somewhat embarrassing position; and also, that I think I have noticed of late years that the practice in our courts has been producing an impression on both our town and rural population, that child-murder, if cleverly managed, stands a good chance of escaping detection, or, at any rate, rarely meets with a very severe punishment.

Professor Simpson thought from the appearance of the opening that the perforation had been effected from the inside, and might have been produced after death. He mentioned the case of a man, near Kilsyth, who had broken his own skull by knocking his head against the corner of an iron chest, in a fit of suicidal mania. He lived alone with a sister, and, had he died without declaring that he had himself done it, it might naturally have been supposed that she or some one had murdered him. Having failed in this effort at self-destruction, he told his medical attendant, Dr Balfour, next day, that he had accomplished it now, for that he had put a nail into his brain; and true enough, when the doctor looked at the wound, he saw the head, and drew out a long nail. The man died a day or two afterwards.

Dr Hamilton thought that probably the immediate cause of death in the case he had brought forward had been several strokes on the head, the marks from which were also mentioned in the report: death from puncturing the skull having been found too slow a process for the purposes of the murderer. The perforation in the skull, he was quite certain, was made from the outside, as it was detected before the head was opened.

Dr Keiller had seen and had been consulted in a number of cases of suspected child-murder. In the worst of all, the mother of the patient had been present at the delivery; the child was found to be the subject of injuries which could leave no doubt that it had met its death by unfair means, for its skull and some of its ribs were broken. Yet in that case the culprit was not convicted.

SESSION XXI.—MEETING III.

December 11, 1861.—Dr PATTISON, *President*, in the Chair.

I. PLACENTA PRÆVIA.

Dr Alexander R. Simpson exhibited the secundines from a case of placenta prævia, and stated that the patient from whom the preparation had been derived was forty-one years of age, and had now borne fourteen children. She averred that her last menstruation took place towards the end of the month of January;

but about the end of February there escaped a quantity of greenish fluid tinged with blood, and she had come in the end of March to consult him (Dr A. R. S.) in consequence of a slight amount of hæmorrhage, which went on from time to time, for about five weeks, ere it finally ceased. She had had three miscarriages at an early period of pregnancy, and feared that on this occasion she was going to abort. In her former pregnancies she had usually quickened at the beginning of the fourth month: on this occasion she quickened in the end of June. In the middle of October she was threatened with a recurrence of the hæmorrhage, for she then passed a decolorized clot along with a quantity of newly extravasated blood. Under the use of the ordinary calmative measures, the bleeding soon ceased, and she had no further threatening of it till five o'clock A.M. of November 7th, when there was a considerable escape of blood, and the patient began to suffer from slight labour pains. The pains went on, and blood continued to be discharged for five or six hours, when he (Dr A. R. S.) was called to see her, and found the os dilated to the size of a shilling, and the parts all soft and relaxed. The exposed edge of the placenta was lying over the left side of the os, and somewhat in front. The pains and the bleeding ceased, and the patient kept at rest all day, passed a quiet night, and had some sleep. On the morning of the 8th there was a recurrence of the pains and of the hæmorrhage, the flow of blood being always most abundant just as the pains were passing off. The os was gradually becoming dilated, but there were no active contractions going on during the day, nor any great gushes of blood; but as the patient was becoming reduced by the occasional slight discharges which might be described as, during some hours, an almost continual sanious oozing, he proceeded at 11 P.M. to expedite matters by rupturing the membranes. In half an hour the uterine contractions came on more vigorously, but with the pains the hæmorrhage returned. Believing that in such cases the flow of blood took place, as Professor Simpson had latterly taught, from the open vessels along the line where the separated surfaces of uterus and placenta are continuous with their still adherent portions, and where the tendency of each recurring pain to increase the separation has the effect of putting the torn vessels on the stretch, and so permitting the escape of blood, he (Dr A. R. S.) passed his finger between the uterus and placenta so as to anticipate the detachment that should have been produced by the succeeding pains. Two strong contractions passed over without the escape of any blood; with a third the head began to press through the os, and by one o'clock the child was safely delivered. The lobe of the placenta, at the margin next to the rupture in the membranes, was flattened and compressed, and close by this there was, in the border of the organ, a white fibrous mass, which was in all probability an obliterated and degenerated lobule.

Dr Pattison remarked that it is seldom that we see the child alive in cases of this kind.

Dr Moir could not understand why this should be the case, except when the placenta was nearly completely separated, as it was well known that the bleeding proceeded solely from the maternal vessels.

In connexion with *Dr A. Simpson's* case, *Dr Keiller* exhibited the placenta of a child which he had delivered with the forceps. The head had lain long in the passages, and the caput succedaneum was very large and considerably excoriated by frequent examinations. When born the child was in a state of asphyxia, but recovered ultimately. The placenta presented several large patches or deposits of a pale reddish appearance, and of considerable consistence. He (*Dr K.*) had seen similar deposits frequently.

Dr A. Simpson thought they were due to extravasation of blood which had taken place some time prior to birth,—an opinion which was concurred in generally by the members present.

II. CONGENITAL UMBILICAL HERNIA.

* *Dr Cochrane* read a communication from *Dr George K. H. Paterson* of *Balbeggie*, as follows:—

"On 30th May 1861, I received a hasty summons to attend Mrs C., æt. 20, a healthy and well-formed woman, the wife of a peasant, in her first labour, at the full time. A few minutes after my arrival, I made an examination, per vaginam, and found the os uteri well dilated, and its lips soft and thin, with a natural presentation, and the labour pains pretty strong and regular. Between two and three hours afterwards—the pains having become very effective during that time—I delivered her of a male child, all rightly formed, with the exception of a peculiarly large pyriform umbilical hernia, covered apparently by 'polished integument,' and considerably larger than an ordinary duck's egg; the cord in its immediate neighbourhood was much thickened and large in circumference for some little way. Having tied and divided the cord about three inches from its integumentary origin, at the apex of the tumor, I took the infant away, and after placing it upon the knee of a female attendant, endeavoured, by the taxis, gently to return the protruding portion of bowel, and to keep it *in situ* for a minute or two, and then enveloped the divided foetal portion of cord in a soft and wide compress, consisting of two or three layers of clean old cotton, with a binder over all somewhat firmly: ordered castor-oil to be given daily in sufficient doses. On the fifth day I undid the compress, and found the cord shrivelled up and all but separated; I took it away, by dividing a small adhering part, and applied the tinder of burned cotton rags, and, finally, the compress and binder over all again. Meanwhile the child had been, and still was crying much; did not take the breast well, and was weak and emaciated; the tumor was rather enlarging laterally. Directions were given that the administrations of castor-oil should be continued daily, and negus and weak beef-tea were ordered to be given frequently. The mother had made a good recovery, with large and full breasts. After continuing the aforementioned treatment for about a fortnight, a strong fœtor was felt to arise from the umbilical tumor; on being uncovered, its external covering had an erysipelatous and sloughy appearance, at its base especially. I ordered the mother to apply a piece of clean old rag, dipped in port wine, to the parts now and then, and also prescribed calomel, rhubarb, and quinine powders, in small doses, to be given twice a-day to the child.

"Nearly another fortnight had passed over before I called again, but when I did so, what was my surprise,—any one versant in a like case may well imagine,—to hear, after my usual inquiries, from the lips of the mother, 'O! Doctor, the awfu'-like thing's awa' through the nicht, for it wasna there i' the morning.' On immediately undressing the child, which now appeared more free of pain, the former erysipelatous and excoriated tumor was truly not to be seen; it had wholly sphacelated away externally at its base all around; the bowel, too, had spontaneously receded; and the opening must have contracted and closed, luckily internally, leaving an impervious orifice, but a pretty deep and scooped-out cavity about the size of a crown piece, and presenting a granulating surface.

"The rest of the treatment consisted for some time in soothing cataplasms, mild escharotic ointments, and careful compressing of the abdomen anteriorly and laterally, until the cavity healed and closed outwardly, sufficiently to permit of an elastic belt being applied, and worn daily for some time over the umbilicus, to prevent a secondary extrusion. Happily the case since has terminated favourably, and my little patient is now grown a fine, lusty, and lively child.

Dr Alexander Simpson thought Dr Paterson's case a very interesting one, as it was a very rare circumstance to see such cases terminate favourably. He (Dr S.) stated that Professor Simpson had seen several cases where the omphalo-mesenteric vessels terminated on the surface of the intestines, and showed a drawing by Hecker of an extremely rare condition of the foetal vessels, where the omphalo-mesenteric vessels passed through the whole length of the cord.

Dr Keiller mentioned that he had seen several cases where the cord dilated into a kind of pouch at its junction with the body of the child, and stated that Dr Thomas Balfour showed a case of this kind some time ago to the Society.

Dr Walter Carmichael doubted whether Dr Paterson's case was one of hernia

at all, and suggested that the tumor might be due to extravasation of blood into the subcutaneous tissue.

On a careful consideration of the case, however, it was the opinion of the Society that there could be no doubt that Dr Paterson's case was one of hernia.

III. OVARIAN DROPSY CURED BY IODINE INJECTION.

The Secretary then read the following communication from Dr Bullen of Cork:—"Last year, in a case of ovarian dropsy, after drawing off several gallons of glairy fluid, I threw two drachms of compound tincture of iodine in an ounce of water into the ovarian sac. The woman complained of great heat in the part, but the symptoms were not severe. She left the Mercy Hospital much relieved, with a hard tumor in the iliac fossa. At the end of six months this woman died of phthisis, and on dissection the ovary was found converted into a solid tubercular tumor about the size of a goose's egg. There was not more than half an ounce of muco purulent fluid in the sac."

Dr A. Simpson stated that he had, a few days ago, assisted his uncle in tapping a woman for ovarian dropsy, and, before injecting iodine, he washed the sac out twice with about twelve ounces of tepid water, for the purpose of removing the albuminous fluid which remained adherent to the walls and would have prevented the iodine from acting so actively as it would otherwise do.

Dr Andrew Inglis alluded to a woman at present in the Royal Infirmary affected with peritonitis, whom *Dr Simpson* had tapped and injected some years ago for ovarian dropsy, and in whom the disease never recurred. The only vestige remaining was a small hard tumor, the size of an orange, on the lower part of the abdomen on the left side.

IV. OVARIAN CYST DISCHARGING THROUGH VAGINA.

The Secretary read the following notes by *Dr Irvine* of Pitlochry:—"Mrs Sloan, æt. 42; married for twenty-two years. Never pregnant. Has menstruated regularly all her life, and still continues to do so. First discovered a swelling in her right side fifteen years ago, which was recognised as an ovarian tumor. For six years the abdomen has been enormously distended, much as at present, when it measures 46 inches, she being a middle-sized and spare woman. She suffered much from the distension, such as inability to lie down, retention of urine requiring the aid of the catheter, cedematous legs, etc., until a year ago, when a watery fluid began to escape from the vagina, and has continued, almost weekly, ever since, with obvious subsidence on each occasion of the abdominal distension and relief of her distress. The quantity discharged at any time she estimated at about a quart, sometimes more, sometimes less; but it is invariably most abundant just before the menstrual period; at this time she has always experienced an increase of her sufferings, but this monthly aggravation has been much less since the watery discharge began. The fluid escapes without previous warning or accompanying pain, often when sitting quietly in her chair, is perfectly limpid, and scarcely stiffens or discolours her linen. Her general health is good, she performs the work of her house often without a servant, can walk several miles at a time, and her chief complaint is of the weight and of the aching in her loins after any fatigue."

Dr Moir mentioned that the late *Dr Hamilton* had a similar case, the preparation of which was in the University. He (*Dr M.*) thought that in cases where the ovary was adhesive to the Fallopian tube, that the fluid might find its way through the latter into the uterus and vagina.

Dr A. Simpson stated that *Frank* had recorded a case of this kind, and had expressed the opinion that the periodical discharge of fluid took place through the Fallopian tube; but it was difficult to conceive of that narrow canal allowing of the passage of the large quantities of fluid that seemed at times in such cases to escape; and it might perhaps be found that in some of these cases an adhesion had taken place between the cyst and the body of the uterus or the roof of the vagina, where subsequently rupture of the walls occurred.

Dr Keiller mentioned that he had had a woman, æt. 50, under his care, in whom a small quantity of a clear albuminous fluid came away, per vaginam, periodically, from an ovarian cyst, which had never been tapped. No opening

or sinus could be detected in the vagina leading to the cyst, and he (Dr K.) thought it probable that some communication existed between it and the interior of the uterus. He (Dr K.) had seen some years ago a girl, *æt.* 18 or 19, with an ovarian tumor, which he now thinks would have been a favourable case for operation. She was a strong and healthy-looking girl, but as at that time it was not thought advisable to operate until the patient became more reduced by the disease, she was sent home for a time. A week afterwards she died suddenly from rupture of the sac, so that it is probable that she would have been still alive had the cyst been extirpated.

Dr W. Carmichael saw some years ago a girl, *æt.* 14, with an ovarian dropsy of considerable size. A short time after he saw her for the first time, she was found lying on her belly, insensible. He (Dr C.) tapped her, but she died owing to rupture of the sac into the abdomen.

SESSION XXI.—MEETING IV.

December 18, 1861.—*Dr KEILLER, Vice-President, in the Chair.*

I. THE CONNEXION BETWEEN TWIN BIRTHS AND IDIOCY.

Dr Arthur Mitchell read a paper on the above subject.

Dr Cochrane remarked that he had had several, although not very many, cases of twin births, and found that the labours were generally easy. The children were not usually long-lived, but those who survived were possessed of ordinary intelligence, and none of them, as far as he knew, were idiotic.

Dr Browne said that it was an old belief of his, founded, however, upon no certain data, that there was a relation between twin birth and idiocy.

Dr Simpson thought that *Dr Mitchell* was quite correct in maintaining that twin births were a frequent cause of idiocy. He (Dr S.) was not aware of a single instance where a twin had distinguished himself intellectually. With regard to the development of the *fœtus* in these cases, it was frequently abnormal, being often in excess. This excess of development was most frequently observed at the periphery. He (Dr S.) knew a person who had six toes, and who walked awkwardly, in whose family there were twins. Agriculturists seem to have been long aware of the great disadvantage attending twin births. *Stephens*, in his "*Book of the Farm*," mentions a certain Lancashire breed of sheep, which is very liable to twin births, but which is not held in good repute by farmers, because it was always found that at the end of the season they had fewer lambs than usual. He (Dr S.) knew a girl with one of the eyes considerably smaller than the other, and one of the arms terminating in a rounded knob below the elbow, in whose family there were twins.

Dr Keiller had seen in Fife a family of eight or nine, in which there were twins. Some of them had the fingers, others the toes, malformed; the phalanges being represented by shapeless knobs covered by the nails. Usually the females were deformed, while the males were well developed.

Dr Simpson said it was interesting to notice that acquired peculiarities were sometimes transmitted from parents to children. In a family in Edinburgh, the husband and wife were both blind from injury, but their child was born blind from atrophy of the eyes.

Dr T. Balfour had seen the case alluded to by *Dr Simpson*, and stated that he had seen another case where both parents were afflicted with acquired blindness, but where the child had perfect vision. With the view of ascertaining whether blind parents were liable to have a blind progeny, he (Dr B.) made inquiries at the Blind Asylum of this city, and found that the managers of that institution interdicted blind people from marrying each other, not, however, from any fear that the progeny would in all probability be blind, but solely on moral grounds. As illustrating the transmission of acquired diseases from the parent to the child, he (Dr B.) mentioned the case of a gentleman who had a family of healthy children. On one occasion he was thrown from his horse, and after the accident was liable to attacks of epilepsy. The children born to him after the accident were likewise subject to epileptic fits.

Dr Simpson thought that it was possible, in the case last mentioned by *Dr*

Balfour, that the epilepsy might have been due to some congenital malformation in the children.

Dr Keiller had seen a child, the upper part of whose ears turned back and twisted in a peculiar way exactly like its mother's. It was well-known, although it was impossible to give a satisfactory reason for it, that the auricle was very frequently malformed in imperfectly developed children.

II. DIFFICULT PARTURITION AS A CAUSE OF IDIOCY.

Dr Arthur Mitchell read a paper on this subject.

Dr Keiller said that he had delivered, four months ago, a woman of her first child. The labour was tedious, and the head of the child subjected to great pressure in the maternal passage, so that he had to apply the forceps to terminate the labour. The child is subject to fits, sometimes having several in a day. It feeds well, but is puny. One eye is larger than the other, and the child is evidently somewhat idiotic. He (*Dr K.*) attributed this to the pressure which the head underwent during parturition.

Dr Simpson remarked that it was well-known that one physician in this neighbourhood was in the habit of using the forceps once in every three or four cases, while another was in the habit of turning and extracting by the feet in all cases. The amount of injury which was in this way done to the brain by the pressure to which it is subjected could not be well estimated, but that there was no doubt it must be considerable. Sometimes considerable injury is inflicted on the head by the forceps, without apparently doing much or any harm. He (*Dr S.*) knew a surgeon practising in this neighbourhood, who has a deep indentation on his head caused by the forceps, and who is certainly perfectly rational, and something more. He (*Dr S.*) had no doubt that over-interference with the forceps was productive of much harm to the child, and that in those localities where the forceps were used the mortality and idiocy amongst children would in the absolute be greater and more frequent than where the forceps were used in moderation. He (*Dr S.*) thought that *Dr Mitchell's* whole paper was an argument in favour of bringing on premature labour much more frequently than is practised at the present time, inasmuch as the enormous pressure to which the head is sometimes subjected in the maternal passages at the full time, is thus reduced to a very trivial amount, owing to the comparative smallness of the head at the seventh month. As showing the harmlessness to the child of bringing on premature birth, he (*Dr S.*) mentioned that *Newton*, whose intellectual greatness is undisputed, was born prematurely, and was so small that, when born, he was placed in a quart mug. In two severe cases, where the bones of the head of the child were indented to a considerable depth by the forceps, he had applied a sucker or air-tractor and drawn up the depressed bone to a level with the surrounding parts. One of the children was still alive, the other died at seven months. *Dr Weir* and *Dr Paterson* saw these cases thus treated.

Dr Moir stated that he had had two cases where the children suffered severely from the forceps. The one is subject to fits, the other is still fatuous, but attempts to speak. He (*Dr M.*) suggested that the skull should be trephined, and the depressed bone raised up, but this was not carried out.

III. CASE OF UNILOCULAR OVARIAN DROPSY.

The Secretary read the following communication by *Professor Dyce* of Aberdeen :—

"When I saw the patient in 1851, she was a healthy, rosy-faced girl, 22 years of age, and had then been tapped 54 times. I repeated the operation in April 1851, and since that time until 2d May 1858, she has been tapped 38 times—in all, 92 times.

"The operation used to be repeated about every six weeks, for several years, but the periods have been gradually lengthening, and the quantities withdrawn equally diminished. The quantity drawn off each time was about 32 lbs. In May 1857, the operation was last performed. Since that time she has been in perfect health, and no fluid could be detected when last examined.

"The following are the times and years:—

From April 1846 to 1850,	. . . . .	54 times.
" 1851 to 1852,	. . . . .	20 "
" 1853,	. . . . .	8 "
" 1854,	. . . . .	4 "
" 1855,	. . . . .	2 "
" 1856,	. . . . .	3 "
" 1857,	. . . . .	1 "
		—92

The quantities drawn off, up to May 1857, exceeded 2800 lbs.

"The case was originally under the care of Dr Bremner of Keith; and, with the one exception, he has always performed the operation.

"As it was clearly unilocular, and free from all adhesion, and the fluid always unchanged in its character, I thought it a capital case for a radical cure, by injection or extirpation, but she would not submit, feeling always satisfied with the temporary relief the tapping afforded."

UNIVERSITY OF GLASGOW.

DR W. T. GAIRDNER has been appointed Professor of the Practice of Medicine in the University of Glasgow, in the room of Dr Macfarlane, resigned on account of bad health.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

SOME time ago a prize of twenty-five guineas was offered by the Royal College of Physicians for the best Essay on the Mineral Waters of Scotland. We are now enabled to announce that the prize has been awarded to Dr Murray Thomson, Lecturer on Chemistry, Edinburgh, for an essay, which, besides giving a general view of the subject, contains numerous original analyses.

THE LATE PROFESSOR TRAILL.

A BRIEF notice in our last number informed our readers of the decease of Dr Traill; the death of the most aged member of the Medical Faculty of the University of Edinburgh deserves a more formal record.

Thomas Stewart Traill was born at Kirkwall, in October 1781; and before he was three months old, he was fatherless. Without brother or sister, he was early trained to think and act for himself, and to his latest days was characterized by independent action and strong self-will. With a moderate patrimony, left to him in boyhood by a grandfather, he never experienced any pressing want of money; and, on the other hand, during his long life he never showed any desire to accumulate wealth. Being the son of a clergyman, his mother and other relations directed his studies towards the church. At Edinburgh College he completed a four years' literary curriculum, and after taking the degree of A.M. was duly enrolled as a student of divinity. But theological pursuits were speedily abandoned. The attractions of advancing chemistry lured young Traill into the medical ranks. His professional classes were ardently and punctually attended; and in 1802, when a few months under 21 years of age, he passed his examination, and obtained the degree of Doctor of Medicine. Dr Traill's first public appearance was the unusual one, of delivering a popular course of chemical lectures in his native city of Kirkwall; the first of such courses recorded in Scotland. A benevolent object was in view. Deficient crops had occurred in 1802, and still more in 1803, and the fees, from a large attendance, paying 10s. 6d. each, were given by the lecturer to purchase food for those in extreme want.

Settled in Liverpool as a medical practitioner, and much occupied in visiting patients, there continued still the unceasing cultivation of scientific chemistry, with the kindred studies of natural history and meteorology, the latter being at all times a special favourite. Dr Traill frequently gave lectures on chemistry; and that these were commended may be gathered from the fact that his

course was at first recognised as a chemical qualification for medical schools,—an honour which the lecturer was the first to repudiate, by writing to the London colleges to remonstrate against such a recognition.

To the Literary and Philosophical Society of Liverpool the contributions of Dr Traill, from 1812 to 1821, were both numerous and diversified. As specimens we enumerate :—On the Geological Character of Granite in the Vicinity of Shap ; on the Wernerian Classification of Mountain Rocks ; on Chalybeate Mineral Waters ; the Origin and Progress of Sculpture among the Ancients ; the Climate of Gibraltar ; Letter to Directors of Bank of England to prevent Forgery of Notes. And on matters more closely connected with the medical profession :—On the Application of Cold Affusion in Early Stages of Measles ; on Slowness of Pulse from Use of Digitalis ; the Anatomy of the Black Ourang-Outang ; Detection of Oil in Serum of Blood in Patient with internal Inflammation.

As the first secretary of the Liverpool Institution, in 1825 and following years, Dr Traill was in a position to do much for diffusing a taste for useful and scientific pursuits, and on several occasions admirable addresses were given by him to the committee and members of the institution. In the first publications of the Society for the Diffusion of Useful Knowledge, Lord Brougham, who took a personal direction, applied frequently to his former college companion for chemical articles. But no larger publication of any kind by Dr Traill took place. The longest seems to have been a life of William Roscoe, in the 13th volume of the Edinburgh New Philosophical Journal. This memoir is carefully composed, and gives a pleasing impression of the good taste and elegant style of the author.

During the summer of 1833, lectures were first given as a professor by Dr Traill, and annually till 1862 a course of three months was delivered to medical students. Occasionally during the winter session, a course of about four months' duration was given, sometimes to medical students, but of late years more frequently to students of law. As a teacher he was pleasing and instructive. The treasures of his well-stored mind were exhibited, and his kindheartedness attracted the students ; while his power of illustrating any medical point, by reference to various sciences, ranging, if need be, for illustration, over every region of the earth, was such as will render it difficult to supply his place. That he continued to lecture with a declining class during the last two sessions was matter of regret to all his true friends.

On coming to Edinburgh, Professor Traill was elected a Fellow of the Royal College of Physicians, and during the years 1855–56 he was President of the College. At the Royal Society his attendance for many years was punctual ; but it was to the seventh edition of the Encyclopædia Britannica, under Professor Napier as editor, that Dr Traill contributed his principal writings. The article Physical Geography, published separately, is well known ; and the article Medical Jurisprudence formed for many years his class text-book.

His largest undertaking has still to be mentioned ; the editorship of the eighth edition of the Encyclopædia Britannica. During the years 1852 to 1856, upwards of forty articles flowed from his pen ; besides, he took the superintendence of many more, and it was only with declining strength that his interest in the later volumes diminished. These articles show great versatility of talent, with an astonishing amount of technical knowledge. Dr Traill has been both blamed and commended for being no philosopher, and for avoiding the investigation of what is obscure or latent. His strength lay certainly in gathering facts, and these, a tenacious memory, improved by a methodical system of note-taking, enabled him to reproduce at will.

During his residence in England, the only complaint from which Dr Traill suffered was rheumatic gout. Recovery took place on his removal to Edinburgh ; and during thirty years of university life his only serious illness was in January 1861, when he suffered from an acute pulmonic attack, accompanied with breathlessness, and anasarca of the limbs. Only partial recovery took place, and many marks of advancing years and of permanently diminished powers of life remained. During May and June of the present year, and till

the 18th of July, Dr Traill lectured regularly, not missing an hour. Seven additional lectures would have concluded his thirtieth summer course of Medical Jurisprudence; and thereafter, as was well known to his colleagues and friends, his resignation of the Professorship would have taken place. But an inexorable command to cease came in the form of an illness of eleven days' duration, which terminated fatally on the 30th of July 1862.

THESES IN THE OLD FACULTY OF MEDICINE OF PARIS.

FROM Martinmas to the Carnival, the bachelors, aspirants to the Doctorate, had to sustain, in full costume, and before a numerous assembly, their *quodlibetary* theses,—that is to say, theses chosen upon some subject of physiology or medicine. As far as possible one per week ought to pass. From Ash-Wednesday to the vacation was the term for the *Cardinal* theses, so called in honour of Cardinal d'Estouteville, who had instituted them. These were almost always upon some point connected with hygiene. Among them were to be found some upon strange and occasionally puerile subjects, which have often been referred to as proofs of the folly of the faculty. There would be little interest in naming the serious subjects, which constitute, after all, the topics of the majority, and many of which might be discussed with advantage at the present day; but among them were such questions as the following:—“Are heroes the offspring of heroes?” “Are heroes bilious?” “Is it good to get drunk once a-month?” “Is woman an imperfect work of nature?” “Is sneezing natural?” “Have bastards more talent than legitimate children?” “Should account be taken of the phases of the moon in regulating the cutting of the hair?” The theses of the Faculty had an invariable form. They were composed of five parts: in the first the exposition of the subject was given, and the *major* was laid down; in the second it was developed; the third and fourth were devoted, the former to the establishment, the latter to the illustration, of the *minor*; in the fifth, objections were refuted; and the conclusion was drawn from the premises. It will thus be seen that the Faculty was still in the seventeenth century,—at least, as to the purely scholastic form of its traditions. The argumentation was of terrific length. For the *quodlibetary* theses, the disputation was carried on from six o'clock in the morning till mid-day. The presidency was taken in turn by all the doctors-regent, beginning with the youngest. It was obligatory. A doctor who did not preside in his turn would have incurred the penalty of degradation. The fire was opened by the bachelors present. From six to eight o'clock, each of them presented to the candidate an argument, which he refuted according to the best of his ability. After these preliminary skirmishes, battle was joined, more lively and more general. Nine doctors appointed *ad hoc*, three from the upper, six from the lower bench, descended successively into the arena, and carried on the contest with a fresh vigour. This lasted three hours. Finally, the sitting was closed with a general assault; from eleven o'clock till noon all present had a right to take part, and to overwhelm, under a shower of questions, the candidate, alone against so many enemies.

For the *cardinal* theses it was still worse. The meeting lasted from five in the morning till noon, and each bachelor was obliged to propose two arguments to the respondent. These prolonged disputations must have been a terrible ordeal. What a situation was that of the poor bachelor, obliged by the statutes to have, during seven hours, more readiness, more learning, more erudition, than the whole Faculty; to answer without losing himself the most subtle arguments which the spirit of controversy could suggest; to take care at every instant not to hazard a phrase nor a word which could be turned against him, and which his adversaries were ready to seize as soon as uttered, in order to overwhelm him by it at the decisive moment. And to render the contest still more unequal, usage required in the *quodlibetary* theses that the candidate should himself furnish to his rivals and to his judges the means of recruiting their strength. In a room adjoining the Hall of Acts were served, *at his expense*, wine and other refreshments. Each doctor could at pleasure

repair to the buffet, thence to draw ideas and inspiration; and it is probable that the ardour of the dispute was sometimes not the only means of heating the heads. Alone, the unfortunate aspirant remained in the breach, without a moment of interruption, arguing and being argued against, overwhelmed with objections, until the twelve strokes of the great clock at length brought to an end this prolonged trial.—*Gazette Hebdomadaire*, 19th September 1862.

MEDICAL EDUCATION IN EDINBURGH.

IF I were to be asked what are the greatest merits of the Edinburgh School and in what respects it differs from others, I would say:—1st, In being condensed; all the lecture-rooms are near each other—a necessity in our climate. 2d, There is perfect free trade in teaching; a student, with certain restrictions, may attend any authorized teacher. If he prefer Jones to Brown, he takes Jones's class out, and Brown says "he is very glad to hear it." Of course, the professors are older and generally more eminent men; the extra-mural lecturers are young hard-working teachers: the former enjoy the "golden sweetness of ensured repose;" the latter are striving towards that reward their elders have merited and won. But this jumbling together of great and small, young and old, has its peculiar advantages, which are more to be observed among the taught than the teachers. If an Edinburgh man works at all (and I, who know most of them, could only name one or two who do not), he does it with a merry determination to conquer all difficulties. Men soon become individualized, and identify themselves with some branch of study. If they think they can learn it from one man better than another, they go to him of their choice. The microscopic man laughs with and at his brother who only uses the scalpel, and the latter howls his friendly chaff at the man who has given himself up to botany or chemistry; but each man has his "*Bachelor's Wife*," his mind's mistress, and is determined to do her honour; so you find in Edinburgh even very young men bringing forward valuable contributions to science, and acquiring that habit of patient investigation and good-humoured tolerance of varied opinion which makes this world so pleasant. The expenses of this school I append, which need frighten no one.

As the financial story is so shortly told, I may go now into the general question. Why should I prefer Edinburgh for a man learning the medical profession? Why should I prefer it as a home for my son while he is preparing to fill his father's honoured shoes?

My answer to the first is, that the place is devoted to education and exercise; the coldest hearted and least enthusiastic novitiate must surely feel his heart beat quicker when he first walks into the old school of the Monros: if the soldier has a "*bâton*" in his knapsack, the freshman now wandering listlessly in the quadrangle has a "*chair*" in his head, may be some day a professor. Then every one is learning something. "Don't bore me with your mathematics or small talk; I'm reading '*Syme's Surgery*.'" What are you going to do this evening? Answer—*Read*.

Now this would be very wrong elsewhere, in crowded London streets and other educational localities; but let me answer my question: Five minutes from any part of the town is time enough to walk into pure, fresh, country air, as it blows over the Pentlands, or comes up raw and misty from the east. Still it is fresh air. The demonstrator, after teaching 400 students, rushes by rail to Granton for 6d., and while the blue Frith of Forth flashes its ripples at his weary feet, he is purified from the necessary impurities of his calling: so are his pupils.

Yes, my son shall study medicine in Edinburgh, and so, reader, shall yours if you wish him to properly fill his father's honoured shoes. And when you and I are both old men, or when the sod of the valley is green above us, he will keep our memory green too, and that of the dear old place

"Where Learning with his eagle eyes
Seeks Science in her log abode."

—*Correspondent of Medical Times and Gazette*, September 1862.

Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Practical Notes on Diagnosis, Prognosis, and Treatment in Cases of Delirium Tremens.* By THOMAS LAYCOCK, M.D., F.R.S.E., etc., etc., Professor of the Practice of Medicine and of Clinical Medicine, and Lecturer on Medical Psychology and Mental Diseases in the University of Edinburgh; Physician to the Royal Infirmary, and Consulting Physician to the Milnholm Lunatic Asylum.

THE treatment of delirium tremens is still so much a matter of discussion, that I think it will be useful to examine into the ascertained effects of treatment, and point out what help a more careful diagnosis and prognosis may afford the practitioner. Four years ago,¹ I endeavoured to show how successful the expectant and rational method of treatment is, when compared with that in which opium and stimulants are freely administered. I then stated that the only fatal case of 28 I had thus treated in Infirmary and private practice during the previous four years, was one already treated by opium. Since that date, I have had 40 cases of varying degrees of severity under care, and only one of these terminated fatally. That was in Ward X. of the Royal Infirmary, in which death occurred as a sequel to continuous epileptic fits in a young man exhausted by drinking and licentiousness. The obvious conclusion from these results is, that the mortality from delirium tremens under a rational and expectant treatment, from which the free use of opiates and stimulants is excluded, is extremely small. On the other hand, I showed by extracts from the statistics of the cases admitted into the Royal Infirmary of Edinburgh, that there were 481 cases treated according to the old method during the 11½ years between 1st July 1839 and 30th September 1850, of whom 125 died or 26 per cent. During portions of the period there was, however, a much higher mortality; for of the cases admitted between 1st July 1843 and 30th September 1844, there died 41 per cent. In other hospitals and in the British army, the mortality has averaged much less, being still, however, an average of 15 per cent., under a method of treatment similar in principle to

¹ Edinburgh Medical Journal, October 1858, "Clinical Illustrations of the Pathology and Treatment of Delirium Tremens."

that followed at the Royal Infirmary, namely, by stimulants, and by opium and its salts administered with the object of inducing sleep. To show that the small mortality which accompanied the rational and expectant treatment in my hands was a uniform result, I directed attention to the similar results obtained by a similar method recorded by Esquirol, Kühn, Calmeil, Ware, and my neighbour, Dr Peddie.

The facts and conclusions of the paper led to discussion both in public and private,¹ and had, doubtless, a favourable influence on practice, although by no means to such an extent as might have been hoped. So many of our leading physicians and writers had for so many years given the sanction of their high names to the "heroic" method, and laid down so simply and categorically the rules for practice, and the method had been so long and so universally practised without much question, that to doubt its efficacy, and affirm that a less meddlesome procedure was better, was little else than a kind of heresy. The notion, too, seemed incredible to those accustomed to heroic doses and methods, that what appeared to be a do-nothing treatment, could be of any avail. The following will serve to illustrate this kind of feeling, which has been also expressed privately as well as publicly. In my "Principles and Methods of Medical Observation and Research," published in 1856, I illustrate the results of rational methods of treatment by this identical instance of the simple treatment of delirium tremens. A reviewer of that work (Dr Porcher) in the Charleston Medical Journal and Review, quotes the passage approvingly, thus:—"Delirium of drunkards may be treated very successfully on the expectant method, if the alcoholic stimulant be duly abstracted, and quiet, with proper regimen and common sense, simple measures of relief, as cold sponging, etc., be adopted." To this passage the editor appends the brief foot-note "*Improbable.* ED.;" and this, although several leading physicians in the United States had already established most conclusively the safety and efficacy of that method.

It is considerations like these which make the persistence in the heroic method by the profession at large less surprising. Within the year we have had one practitioner recommending large doses of cayenne pepper in gin and water as a specific, others reviving the practice of giving large doses of digitalis, others praising the use of opium and brandy. Nay, one practitioner seems to think that five-grain doses of opium, administered as recommended by Dr Elliotson, twenty-five years ago,² to be much too small to be safe.

¹ An article in the British and Foreign Med.-Chir. Review for October 1859, deserves special mention as a critical examination of the doctrines and practice current as to delirium tremens.

² "Exhibit opium in full and repeated doses. It is necessary to give from three to five grains, and to repeat these doses according to circumstances. In some cases it is necessary to give five grains every six or eight hours, and you must continue it till sleep is procured."—*Lectures on the Theory and Practice of Medicine*, p. 325.

The details of the treatment adopted by this gentleman appeared in the *British Medical Journal* so lately as April 19 of this year, and since, so far as I know, they have not attracted any notice, I subjoin the substance, as a striking example of the influence of categorical and dogmatic expositions of treatment on practice. The writer observes in the first place,

"Several practitioners having of late brought before the profession their treatment of delirium tremens, I am induced to add my mite to the general information, and herewith send full particulars of a case just recovered, together with a short reference to eleven other cases with which I have met in my practice during the last six years. I must, however, premise the report, by stating that six of the earlier cases were treated by the usual plan, with doses of opium varying from three to five grains every four hours, not forgetting a fair allowance of the habitual stimulant; and I find that the result of these cases has been, two recovered, two died, and two became insane, remaining so to this day."

A proportion of 66 per cent. dying or becoming incurably mad, is certainly not an encouraging result. The writer, however, seems to be of opinion that the "usual plan" failed because it was not energetic enough; for he adds,—

"Five other cases were treated with large doses of opium, varying from ten to thirty grains. The last case, of which I enclose a report, was treated still more energetically, and, as will be seen from the perusal, a dose of 120 grains of powdered opium was given at once. Of these latter six cases all and every one recovered without a bad symptom."

The quantity of opium taken in this reported case "during the eight days of treatment" amounts, the reporter affirms, "to only a few grains short of two ounces." It is to be observed, however, that after he had given his patient 320 grains of opium, 60 grains of Dover's powder, and 3 ounces of laudanum, with a liberal allowance of brandy and beer, between the morning of the 26th February and midnight of the 3d of March (or less than six days), he had had so little success in his object of procuring sleep, that he reports as follows:—

"On the morning of the 3d I found him very excited. He had had no sleep. [On the preceding day 40 grains of opium had been taken at intervals of 4 hours from 8 A.M. to 4 P.M. or 3ij. in 8 hours.] The bowels were well relieved, the urine was free. At 5 P.M. he took a scruple of powdered opium, with an ounce of laudanum. At 9 P.M. and 12 P.M. this dose was repeated. At 3 A.M. on the 4th, he took a drachm (60 grains) of opium, which was repeated at 6 A.M. and at 10 A.M. At this date, seeing a report of some cases strongly urging the claims of digitalis, I gave him half an ounce of the tincture, and repeated the dose in four hours; the only result being the second dose lowered the pulse from 120 to 80. He passed a very excited night, and at 8 A.M. on the 5th, I gave him a cold shower-bath, and a dose of half a drachm of opium, with one grain of tartar emetic. At 12 A.M. he had two scruples of opium, with a grain of the emetic tartar. At 8 P.M. a drachm of opium, with two grains of tartar emetic. The shower-bath was repeated for two minutes. He was also dry cupped at the nape of the neck; and at 11 P.M. he took two drachms of opium, with two grains of tartar emetic. He slept after this dose for thirteen hours, awoke, took a cup of beef-tea with brandy in it, had the bowels well relieved, and went to sleep again. From this date he slept more or less for the next twenty-four hours, and at the end of that time was well."

Of this history we may safely remark, that if opium was really taken by the patient in the quantities stated, his recovery was certainly a much more striking fact than his death; but be this as it may, the doses were given according to the canon. "Opium to be of service," the reporter concludes, "must be given to produce *sound* sleep; and if twenty grains be not sufficient, why not give forty grains?" Now, a careful diagnosis and prognosis (and these are necessarily at the foundation of the expectant method of treatment), would have equally convinced this energetic practitioner that within a less period than he took to *cure* (as he thought) his patient, nature, with judicious assistance, would have worked her cure with equal success and much less risk. Measured by the imperfect description given, the case was of the simplest character.

"I was sent for at 5 A.M.," says the reporter, "to a farmer in this neighbourhood. I found him very excited; and he told me he had not slept all night, or for several nights previously, but had had several terrible fancies or dreams of late. I ordered him five grains of opium with a saline aperient every four hours, also a fair allowance of brandy and water and beer during the day. I saw him again at 6 P.M. He had had no sleep. I gave him six grains of powdered opium. At one o'clock this dose," etc., etc.

Here, the excited manner, the sleeplessness, and the "terrible fancies," indicate the kind of mild attack known as "the horrors," and which need never continue, if uncomplicated, longer than three or four days, or, if developed into active delirium, than seven days.

But scepticism has taken a more insidious form. The difference as to the results is so great between the two methods of treatment, that, from time to time, doubts have been expressed whether the cases treated by me were genuine examples of delirium tremens—really severe cases,—and not of the simplest kind (which doubtless some were); and in this way the force and value of the practical conclusions therefrom are much diminished. Dr W. T. Gairdner, for example, who has done me the honour to notice my lately published paper on two occasions, and who shows that he is fully convinced of the value of the expectant and rational method, has given expression at the same time to doubts of this kind. He seems to be of opinion that the diminished mortality amongst my cases must be attributed, in some degree at least, to a diminished severity of type; that the cases generally, in short, which have been treated so successfully of late years are not like those formerly treated, in which the mortality was so great, but are "miniature types;" and that, consequently, my conclusions as to the comparative safety and success of the method are not well-founded. Dr Gairdner observes,—

"This fact, of the diminishing severity of the disease, is one which I think probably Dr Laycock has not sufficiently taken into account. . . . I have no doubt at all, indeed, that many of his cases, like many, or perhaps most of my own, were *miniature types*; and I think it not easy, or rather not possible, to draw exact numerical inferences from those cases, as to the probable mortality of delirium tremens in the older periods of the history of the Royal

Infirmiry, if it had been met in those days by being left to nature, or by a treatment in the main expectant, such as we employ at present."—*Clinical Medicine*, p. 262.

While conceding that the habits of the Scottish people may have improved of late years, and that there are consequently fewer cases of delirium tremens to treat (although even this is doubtful,) I must venture to question altogether the alleged fact of change of "type," and of "diminishing severity," in those which do occur. I have seen cases of delirium tremens for more than thirty years, and I can state that nothing I have observed during that period would allow me to draw such a conclusion. I see no such difference in the intensity of the cases, understanding by that term a violent and intractable character of the symptoms and a tendency to death. If I stood alone in the numerical conclusions I draw as to the comparative results of treatment, I should certainly feel inclined to suspect a fallacy somewhere; but Dr Ware of Boston, who published the results of his treatment in the *Boston Medical and Surgical Journal* for 1838, investigated the whole subject very carefully. The cases which he treated in private practice, in all 69, occurred during a period of about 20 years, thus carrying the date of his observations back to 1818. Other 31 cases were treated in the Almshouse. Various methods of treatment were adopted, and notes taken of the complications. I subjoin a table of his remedies and the results.

Treatment by Dr Ware of Cases of Delirium Tremens.	No. of Cases.	Bled.	Died.	Recovered.	Complicated with Acute Diseases.
Opium, large doses, . .	8	0	4	4	1
Do. small doses, . .	7	1	2	5	1
Emetics,	12	1	1	11	2
Bleeding (only),	2	2	0	2	0
Eclectic,	9	5	3	6	7
Quinine,	1	0	0	1	1
Mercurials,	1	0	0	1	0
Expectant,	29	4	1	28	1
Total,	69	13	11	58	13

It appears from this table that of 15 cases treated by opium 6 died, or at the rate of 40 per cent. (the Edinburgh mortality of 1843–44), while of 54 treated by emetics, etc., but without opium, only 5 died, or at the rate of 9 $\frac{1}{4}$ per cent. If, however, we compare the mortality when the treatment was by opium in large doses, with that of the expectant method specially, we find that of the former 50 per cent., or one-half died, of the latter only 3.44 per cent., or 1 in 29. In each group there was one case complicated with acute disease, which, if eliminated as a fatal case in each, whatever the treatment, leaves 3 deaths in 7 treated by large doses of opium, and no death in 28 treated on the expectant plan. All these were treated more

than twenty years previously to the publication of my paper, and some of them forty years. Yet the results of treatment according to the two methods were the same then as now.¹

It may be objected that the "type" of the cases treated in the United States probably differed from those treated in Great Britain, from differences in climate, drinks, and the like; but then Dr Ware describes the symptoms very clearly and concisely, and there is no observable difference between his cases thus described and those met with here. And if it be further alleged that the Scotch form had formerly something peculiar about it, we have, in answer to this surmise, the facts detailed by Dr Peddie, who communicated a valuable paper to the *Edinburgh Monthly Journal of Medical Science* for October 1854, and which he reprinted and published in the same year. His experience had then extended over a period of fifteen years in Edinburgh, and therefore included the time (1846-48) during which Dr Gairdner, as house-physician or student, observed the cases admitted into the Royal Infirmary. In the earlier period of Dr Peddie's observations, the cases were of the same class of persons as would be sent to the Infirmary,—“tavern-keepers, brewers, butchers, and the lowest order of dram-drinkers generally;” and he adds, “Latterly the instances have been mostly among a better class of society, *yet the disease presenting the same features.*”² Now Dr Peddie states, “During the last ten years [*i. e.*, since 1844] I have treated upwards of eighty cases of the genuine disease, *many of them severe ones*, with uniform success.”³ This would be conclusive evidence against Dr Gairdner's conclusion that the success of the expectant and rational method I chronicled (to say nothing of his) is due to a “diminishing severity” of the disease in Edinburgh since 1846-48, for Dr Peddie's cases indicate the same success by substantially the same method during the very period of Dr Gairdner's observations. And if it be alleged that the cases in the Infirmary might be from other parts of Scotland than Edinburgh (which is probable enough), we have the experience of Dr Hood of Kilmarnock, who, in 1849 or 1850, informed Dr Gairdner to the effect “that delirium tremens was a disease of extremely small mortality in his own practice, and that he ascribed the small mortality mainly to his having for years abandoned all very active treatment by narcotics and stimulants.”⁴ Nor can we come to any other conclusion if we inquire what was

¹ These facts will be found in the January Number for 1839 of the *British and Foreign Medical Review*, p. 268-70. The abstract to which Dr Gairdner refers in the number of the same *Review* for April 1847, p. 603, is a different paper, and was given by the then editor, the late Sir John Forbes, in proof of his doctrine, now generally admitted by the foremost men, that we must know the natural history of any given series of morbid changes, before we can estimate the value of the remedial means used to modify the series.

² On the Pathology of Delirium Tremens, and its Treatment without Stimulants or Opiates: 1854. P. 27.

³ *Ibid.*, p. 32.

⁴ *Clinical Medicine*, p. 264.

the true character of the cases which Dr Gairdner compares with those I treated, and from which comparison he draws the inference that there is a "diminishing severity" in delirium tremens. These standard cases, as we have seen, are referred to by Dr Gairdner as coming under his observation more especially at the Royal Infirmary in 1847-48, when he was one of the house-physicians, and in the previous year. Now, we have the published statistics of the cases admitted at that period, and we find that, from 1st October 1845 to 30th September 1848, there were 144 admissions and 51 deaths from delirium tremens, or nearly 35 per cent. To what was this large mortality due? To the "severity" of the "type," or to the treatment? Dr Gairdner's doctrine is, that it was partly due to the one, partly to the other. Now, there is every reason for affirming that the severity of the form of the disease was never tested at that time by the only proper test, namely, by cases being left to nature; while there is the strongest evidence that its intractable and fatal character, as seen in the Edinburgh Infirmary, was due to treatment, in the testimony of Dr Gairdner, an eye-witness of it. Dr Gairdner gives evidence as to the doses of drugs and alcoholic drinks; but it is a fact not to be overlooked, in considering the results of treatment (although not mentioned by Dr Gairdner), that mechanical restraint by means of the strait-waistcoat, bed-strap, and the like, was almost invariably used also. The restraint, perhaps, was rendered necessary by the drugs and whisky, but it was probably also one of the causes of the large mortality.¹ He states,—

"Beyond all doubt, it must be conceded by every one who has given fair play to nature, . . . that the old routine treatment by spirits and by large and repeated doses of opium and hyoscyamus² was, in all but the most wary hands, positively injurious. . . . I think there is little doubt that, in many cases, it simply substituted narcotic poisoning for delirium tremens; and of this fact I firmly believe I have been but too often an eye-witness, when acting under superior instructions in the Royal Infirmary in 1846-48, and under the rule of procuring sleep at all hazards, by the continuous administration of narcotics.—*Clinical Medicine*, p. 262.

Many of these cases, then, were, in truth, not cases of delirium tremens, but of narcotic poisoning, the result of treatment, *plus* delirium tremens. Hence, therefore, the severity and the mortality;

¹ In reference to the system of mechanical restraint in operation at that period, Dr Haldane has favoured me with the following statement:—"During the time I was one of the house-physicians (from 1846-48), the noisy wards, male and female, were under the charge of a single female attendant, and it was a regular matter of course that every patient who manifested any degree of restlessness was subjected to mechanical restraint. The mortality from delirium tremens was large; and I remember well that we ascribed it in part to the aggravation induced by the restraint rendered necessary by the system then in operation."

² Dr Gairdner adds in a note, "the formula of 1846-47, in the Edinburgh Royal Infirmary, was pretty nearly as follows:—R Tinct. opii, ʒij.; T. hyoscyam., ʒij.; Spt. commun. (whisky), ad ʒi. or ʒij. Sig. Haustus, p. r. n. sumendus, donec somnus supervenerit."

but hence, too, the conclusion that in no sense can they be taken as examples of what delirium tremens, without narcotics, used to be. They are nothing more than striking illustrations of the lamentable fact, that a disease naturally simple and transient may be rendered frightfully fatal by false theories and a mischievous routine.

I am well aware that the statistics as to delirium tremens in the Royal Infirmary are probably imperfect. Some of the more transient cases admitted may never have been entered on the register, others may have been diagnosed erroneously. But, then, the same sources of imperfection will and must influence the statistics with which they are compared; anyhow we can judge as to the comparative influence of opium and drinks on the mortality when used elsewhere in the treatment of the disorder. Now, as to this point, the records of the Royal Infirmary are particularly instructive. A method of treatment founded on similar principles was being carried out almost universally at the same time—in private practice, in public hospitals, in the army and navy—yet the recorded mortality was nowhere so great as in Edinburgh, except at the Glasgow Infirmary, during the years 1842–48, when (as appears from the annual reports of that charity) the mortality was nearly 50 per cent. The lowest recorded mortality in a public institution that I have met with is that of the Philadelphia Hospital, during the period from May 1834 to November 1839, where 121 died of 1241 cases admitted, or $9\frac{3}{4}$ per cent. The cases admitted were, however, not only “cases of delirium tremens in all its forms and stages, but included also cases of “intemperance *expected to end in delirium*,” the elimination of which from the total treated would probably raise the proportionate mortality to that observed in other hospitals. Thus, in St George’s Hospital, London, during the years 1850–55, it was 14·6 per cent.; in the General Hospital, Calcutta, from 1842–52, and in the Medical College Hospital, 1851–53, 15 per cent. In his report on the health of the army in 1853, Colonel Tulloch returns the mortality from delirium tremens at 17·6 per cent. for the infantry, and 13·8 per cent. for the cavalry. So that it is an obvious conclusion, that of the cases treated generally by opium and stimulants, the deaths were 15 per cent. Why, then, did the mortality by the same method amount to 35 per cent. in the Edinburgh Infirmary? The answer is obvious. It is well known that the administration of the remedies was in the unwary hands of nurses who so liberally interpreted the “*p. r. n.*” of the formula, that laudanum and whisky were administered almost *ad libitum* to the patients, who were further maddened by mechanical restraint. In April of the current year, Dr Gairdner stated that, during the last three years, he had treated thirty or more cases of delirium tremens, all of which had been under an extremely simple and natural treatment, that only one died, and that this one had a very

extensive double pneumonia.¹ He thus exactly confirms the experience of all who have adopted that plan of treatment during the last forty years, as to the small mortality of the disease when not interfered with by heroic remedies. And I think it may be fairly inferred equally from the facts of experience, that if those thirty or more cases had been treated by mechanical restraint and "the enormous and too clearly poisonous doses," as Dr Gairdner accurately describes them, which he saw given in 1846-48, that the deaths, instead of being 1, would have mounted up to 10.

I have thought it right to go thus fully into the question which Dr Gairdner raises, as to a change of "type" being in any degree the cause of the diminished mortality observed in treating delirium tremens by the expectant and natural method, because I am satisfied that in the present state of doctrine nothing should be left unexamined which tends in the slightest degree to weaken the force of the teachings of experience. For we learn from that experience, as plainly as we can learn anything in our too uncertain art, that upon the choice of one or other methods of treatment by the profession at large depends the serious question, whether from 15 to 50 in every 100 of the cases of delirium tremens treated shall recover or die. Nor is this all. The heroic method, when not fatal to life, may seriously damage the mental powers. How many have lived to become incurably insane under it, has not, so far as I know, been investigated, and perhaps can never be known; but that a certain proportion must suffer in this way is a fair conclusion from all our experience. When cerebral nutrition is hanging in the balance between health and disease,—when, in fact, a temporary mental disorder, caused by powerful nervines, is the state of the patient,—it is only a natural conclusion that the continued or increased use of the causes will aggravate the effects, and change that which would otherwise be acute and transient into a chronic and permanent, if not a fatal disease.

I shall now proceed to consider the more serious obstacles to the general adoption of the rational and safe method of treating delirium tremens which are presented by the method itself. Although simple in principle and safe in practice, it is from various causes really difficult of application. When a practitioner is called to see a patient, he is generally found in a state which seems to demand immediately active and vigorous measures. He is alarmingly restless and excited, wandering here and there under the influence of groundless fears and apprehensions, and exciting the most lively fears and apprehensions in all around him. Perhaps he has not slept for several nights, and it has been necessary to watch with him, until wife, nurse, relatives, are all exhausted. If to all this be added attempts at suicide or homicide, or maniacal and furious delirium, we have a still more urgent case for prompt interference. Now, brandy or some other accustomed stimulant has been found

¹ Clinical Medicine, p. 264.

to produce a temporary calm, and opium or its salts have been recommended on all sides as the "sheet-anchor" of the practitioner,—as the things which will surely calm all this wild and distressing disturbance, and allay the fears and apprehensions, not of the patient only, but of his friends and the bystanders. These drugs are easily accessible and readily taken, and if not successful, the strait-waistcoat is available. On the other hand, the rational method demands that not only the practitioner, but the relatives and bystanders, shall look upon this strange and distressing turmoil with the calmness which rejects all mechanical means of coercion; shall prescribe for, nurse, and watch the sufferer as if he were in nothing worse than a troubled waking dream; and shall await with firm confidence the result of treatment which deliberately promises no immediate results. How far all concerned are defective in these requisites I need not say; but the causes of the defect are obvious. Firstly, the practitioner and friends believe the disease is of a very serious if not fatal import, and ought not, therefore, to be left to simple and apparently insufficient means. Secondly, the knowledge of the forms which are serious, and end either in death or in insanity, is not clearly set forth in books; or, in other words, prognosis is imperfect, and this because the natural course of the affection, in its various forms, is not known. Thirdly, the pathology of the disease participates in the obscurity and defects which attaches to all the class of mental disorders to which delirium tremens essentially belongs. Hence, while the diagnosis is imperfect, and the etiology obscure, the pathological anatomy is worse than defective—is, I humbly think, altogether erroneous. What then would be of the greatest value at the bedside? Two things chiefly,—a sound diagnosis and prognosis. These would enable us to decide, 1. What cases will run a natural course and terminate in health, and what are likely to end in death or chronic cerebral disease; 2. What means are available in each case to the quieting of the patient and his safe nursing and watching until health returns, and what for preventing the disorder terminating in chronic disease and death. These practical points I will now inquire into. But, in the first instance, let us endeavour to get as clear an idea as is possible of the morbid conditions or disorders designated delirium tremens, as a necessary preliminary to inquiry.

It is to be observed, *in limine*, that both in nosology and in practice, the term delirium tremens applies to a group of disorders, whereas, strictly and literally taken, it designates but one of the group. By it we thus understand an acute cerebral affection caused by intoxicating drinks, of which delirium and tremors are the prominent symptoms. Other acute cerebral affections are accompanied or manifested by delirium and tremors, but then they are differentiated from delirium tremens by the causation. Strictly, however, we ought not to include other acute cerebral affections caused by the habitual use of intoxicating drinks, which are not

manifested by delirium and tremors, under the same term; but, then, in excluding these, we lose a practical advantage, for they resemble the typical form in all essential points. They have the same origin, run the same course, and are generally amenable to the same treatment. They are, in short, of the same genus, though not the same species. A more serious hindrance to diagnosis and prognosis is presented in the fact that the acute cerebral disorder is not always caused by intoxicating drinks: these rather modify its symptoms and course. This is specially observable in the primary stages of certain forms of insanity, when there is more or less of *oinomania*. How are these mixed forms to be classed?

This question of the naming the group of disorders classed under the term *delirium tremens* has had much attention, and is of primary importance in practice, although it has been slighted by some very eminent writers. "Men believe," says Bacon, "that their reason is lord over their words; but it happens, too, that words exercise a reciprocal and reactionary power over our intellect. Words, as a Tartar's bow, shoot back upon the understanding of the wisest, and mightily entangle and pervert the judgment." This has certainly been the result of the nomenclature of *delirium tremens*; so that, although "there has been a sort of contention for the honour of naming the disease" (Dr Watson), it is but a confusing Babel, commingling various affections under the same general terms.¹

The use of a name is simply that the thing named may be made known in speech and writing. Hence the practical character of the nomenclature in general, for it names the groups of symptoms so definitely caused as those comprised under the term *delirium tremens*, by the name of the cause. And this is the more necessary because the same groups of symptoms are often otherwise caused. This object is best gained, however, by adding an adjective like "methystic," as expressive of the cause, to the name of any nervous disorder caused by drunkenness; and, thus, both the origin and cause are indicated, which such a term as *delirium* does not express; while at the same time thereby we differentiate it from the disorder when otherwise caused, and in this way indicate both the cause and the leading symptoms. This would fail, however, in regard to the classification of those cases which result from other nervines than fermented and distilled drinks; for it is, I think, well established, that the excessive use of opium or its salts, of tobacco, and even of certain bitters usually thought harmless tonics, will excite, though

¹ I give some examples of the nomenclature of *delirium tremens*:—*Mania à temulentia*; *mania à potu*; *mania potatorum*; *phrenesia potatorum*; *delirium ebrietatis potatorum*; *ebriositas seu hallucinatio ebriosorum*; *erethismus ebriositatis*; brain-fever following intoxication; *methystic brain-fever*, *alcoholismus nervorum chronicus*; *neuropathia potatorum*; *delirium afebrile tremens*; *erethismus cerebri abdominalis*; *delirium vigilans*; *delirium tremens*; *delirium cum tremore*; *delirium nervorum*; *ecstasis nervosa*; *encephalopathia crapulosa*; *encephalopathia nervosa*; *encephalitis tremefaciens*; *meningitis phantasmato-phora*; *polydipsia ebriosa*; *dipsomania*.

more rarely, the same class of affections; while, in other countries, other drugs besides opium and tobacco are used abusively with similar consequences. The word "phrenesia," adopted by Albers, would be a good term to indicate the entire group of acute mental disorders caused by the abuse of nervine stimuli in general, and "methystic" might be used adjectively to indicate those genera which are caused either directly or predisponently by drunkenness. The phrases "*neuropathia potatorum*," and "*alcoholismus nervorum chronicus*," include all diseases of the nervous system caused by drunkenness, and are therefore inapplicable here.¹ What, then, are the cerebral affections—duration and cause apart—which are grouped under the term delirium tremens when caused by intoxicating drinks? They are known as hypochondriasis; as melancholia in its various forms,—apprehensive, suspecting, aggressive, suicidal; as insane impulses—to kill, burn, or otherwise destroy, drink to excess (*oinomania*), and gratify insanely the appetites and instincts; as illusions, hallucinations, delusions, and delusive apprehensions; as wakeful and trembling delirium; and, finally, as mania. These may pass into each other, or be complicated with each other, as when melancholia passes into mania, or insane impulses to gratify instincts and appetites are complicated with hallucinations; or they may be complicated with motor neuroses, as tremors, spasmodic jerkings, convulsive fits, epilepsy; and, finally, may end either in death or become chronic, when the affection comes to be classed as some form of insanity. Any case of this kind, with these leading characters, as to cause, duration, symptoms, and treatment, might be designated methystic phrenesia or phrenesy; and each particular form, methystic hypochondriasis, methystic melancholia, methystic delirium, and the like, according to the predominant mode of mental disturbance.

Although such a nomenclature might, if generally used and carefully applied, be available to a better knowledge of methystic diseases of a mental kind for the future, it cannot be equally available to our past experience, and we still want to know in considering treatment which of these disorders have been generally included under the vague term delirium tremens. Now, I think it is certain that cases belonging to the group of melancholias, with illusions, hallucinations, or delusions of a depressing kind, have been mainly designated thus. Laying aside all ideas as to causation, the typical form offers the pathognomonic symptoms of an acute melancholia—is exactly such a mental affection as is sometimes seen to arise in temperate persons from other causes; the chief difference being that, in acute methystic melancholia, the visceral symptoms, which are the result of drunken habits, complicate, while in ordinary acute melancholia they are absent. In both the mental condition is the same. This fact is of so much practical importance, that I think it will be well to risk

¹ See Falck in Virchow's *Handbuch der Speciellen Pathologie und Therapie*, bd. ii. p. 303.

appearing tedious and substantiate the melancholic character of the typical delirium tremens of writers by quotations from Doctors Ware, Elliotson, Craigie, Wood (of Philadelphia), and Watson.

Dr Ware's description is taken "from cases which were left to take their own course, uninfluenced by medicine."

"The patient first complains that he has not slept well, that he has been disturbed all night by unpleasant dreams, that he has been hard at work, but that matters have not gone right, and his concerns have troubled and perplexed him. During the next day, perhaps he is tolerably comfortable, yet he is uneasy and restless. Indeed, it often makes its appearance after having been preceded by no other symptom than irritability of the stomach and vomiting, and comes on as soon as the vomiting ceases. There is commonly also in the beginning of these cases in which delirium finally ensues, a tremor of the hands and limbs, and more frequently of the tongue; a tremulousness of voice, producing some indistinctness of articulation; a general anxiety; a hurried manner of moving and speaking; imperfect and disturbed sleep; and startings and twitchings of the limbs. This continues for one or two days, each night being worse than the preceding, while in the day there is an increase of the anxiety, restlessness, and trembling of the limbs, tongue, and voice. The night is then passed with only one or two short naps, from which the patient awakes with some strong impression on his mind, of the fallacy of which it is difficult, or impossible, to convince him. His sleep has been filled with dreams of dangers and perplexities, and annoyances innumerable and indescribable. From this state he passes into that of complete watchfulness and delirium. The dreams of his sleeping become the fancies of his waking hours. . . . At whatever period this state of entire watchfulness and delirium begins, we are to date from it the commencement of what may be denominated a *paroxysm of delirium tremens*. . . . Most frequently, however, at this time there are occasional wanderings of mind, though not a continued state of delirium. Thus, while sitting by the patient, we perceive his eye become intensely fixed upon some remote spot in the room, or outside a window, as if it had been suddenly caught by some remarkable object; or he will speak in a loud and quick voice, as if making answer to some one who had addressed him from without, or from behind; or he will start up hastily from his seat, or from the bed, and run to another part of the room, or look beneath the bed as if in pursuit of something." The delirium terminates favourably "at a period seldom less than sixty or more than seventy hours from the commencement of the paroxysm."—*Remarks on the History and Treatment of Delirium Tremens. Trans. of the Massachusetts Medical Society*, p. 67. *Brit. and For. Med. Rev.*, vol. xxiii. (1847), p. 603-5.

Dr Elliotson (who treated the delirium by a method diametrically opposed to that of Dr Ware, who only medicated in the initiatory stages), thus gives the diagnosis of the affection:—

"The diagnosis of the disease appears to be made out from the weakness of the pulse; the want of violence in the patient; the want of a flushing in the face and a redness of the eyes; the want of furious [maniacal] delirium; the want of sleep; and the circumstance of the patient being in a state of tremor of the whole body, with a tongue not dry, but covered with a creamy mucus; with a skin not dry, but sweating profusely; from the circumstance of the patient talking incessantly about his own affairs, about some imagined distress; in attempting to get out of bed; being everlastingly restless, but easily managed and laid down, or brought back to bed."—*Dr Elliotson's Principles and Practice of Medicine*, 1839, p. 325.

Dr Craigie accurately and fully describes the two common forms; the one—a mild form known as "the horrors," and the initiatory stage of the typical form,—thus:—

"In general it is observed that the person about to be attacked sleeps badly, that his nights are interrupted by frightful dreams and cries of terror (*panophobia*), and that he rises in the morning unrefreshed, pale, and without desire for food. Occasionally he becomes sick, and rejects by vomiting what he has taken to breakfast. Very moderate exertion of the body makes him perspire profusely, and anything affecting his mind throws him into a state of tremulous agitation. At the same time he dislikes solitude, and becomes apprehensive and timid when left alone. The approach of night is generally contemplated with more or less horror, and he is unwilling to be left in the dark (*scotophobia*), while his nights become more sleepless and his dreams more frightful."—*On "Brain-fever of Drunkards,"—Practice of Physic, 1840, vol. i., p. 56.*

As the disorder advances, the *panophobia* (which is one of the forms of acute melancholia) is experienced during the day as well as during the night; in short, the nocturnal state of dreaming becomes a diurnal state, and then he passes into the characteristic delirium.

"After a night or two spent in this manner, the patient looks flurried, and is restless, apprehensive, and alarmed. He speaks incoherently, and expresses extreme and groundless apprehensions about his own affairs; and in no long time complains that he sees objects and sights in situations in which they are not, and which have no real existence; or betrays the most dreadful alarm at hideous objects which he imagines are threatening him with destruction. Thus, one patient complains that a frightful-looking huge dog is constantly running at him with open mouth; another, that an animal, altogether imaginary, but of the most hideous aspect, is threatening him. . . . In many instances the recollection seems very confused and impaired. The patient imagines he is not in his own house, and thinks he has, for some great misdemeanour or crime, been removed to some place of confinement and seclusion. In certain cases, again, the patient imagines that several persons are conspiring to cause him some serious and irreparable injury, and he consequently views various friends with suspicion and distrust, which would otherwise appear causeless," etc.—*Ibid.*

Dr Wood of Philadelphia, describing delirium tremens as seen in the United States,¹ gives as the synonyms, "Mania a potu; mania a temulentia; delirium tremefaciens; dipsomania;" but in describing the "simple delirium tremens," he is in almost exact accord with Doctors Ware, Elliotson, and Craigie, as to its course and leading characters; he describes "the horrors" as the simplest kind, and as the initiatory stage of the more complete form characterized by illusions, hallucinations, and delusions in great variety. Dr Wood adds,—

"But with all this variety in the objects of delusion, there is one striking feature of the delirium which is seldom wanting. The patient is almost always fearful, and usually has some special object of terror which influences most of his movements. One person is pursued by justice; another flies from a creditor or an avenging enemy; another is attacked by robbers or assassins; voices are heard conspiring the destruction of the patient; he sees a gun pointed at him through the windows, or a knife glittering in an imaginary hand within his curtains. . . . Most of the violences committed by the subjects of this disease, their occasional vociferations, their struggles, their attempts at flight, and even their assaults on others, originate in some notion of personal danger or disgrace to be avoided."—*Dr Wood's Practice of Medicine, vol. ii., Art. Delirium Tremens.*

¹ A Treatise on the Practice of Medicine, vol. ii.

Dr Watson also mentions symptoms which are characteristic of acute melancholia as those of delirium tremens. He says,—

“Let me remind you, in a few words, of the peculiar characters of the delirium. If you question the patient about his disease, he answers quite to the purpose, describes in an agitated manner his feelings, puts out his tongue, and does whatever you bid him; but immediately afterwards he is wandering from the scene around him to some other that exists only in his imagination. Generally his thoughts appear to be distressful and anxious; he is giving orders that relate to his business to persons who are absent; or he is devising plans to escape from some imaginary enemy. He is haunted by ocular spectres, fancies that rats, mice, or other reptiles, are running over his bed; sees spiders crawling on the ceiling, or a horse's head thrust through the wall of his room. He addresses remarks to strangers whom he erroneously believes to be present. He looks suspiciously behind the curtain, or under his pillow, and he is perpetually wanting to get out of bed; but he is readily induced to lie down again. It is very seldom that he meditates harm, either to himself or others; there is rather a mixture of cowardice and dread with the delirium.”—*Lectures on the Principles and Practice of Physic*, 4th edit., vol. ii. p. 407.

Such, then, being the disorder known as delirium tremens, it remains now to indicate the practical points in treatment to which my experience of the affection has led me. These turn upon the remedies suitable to each individual case; and in each case we have to determine whether the disease will terminate favourably or not,—that is to establish the prognosis;—when diet and regimen will serve; and when opium, tartar emetic, digitalis, chloroform, or the like are to be administered, and how. For, although acute melancholia is the typical form, it sometimes, but much more rarely, is manifested as equally acute mania.

In the treatment of all cases alike there are certain points to be attended, which may be briefly noted. The patient is to be put to bed, his clothes taken away, and all friends dismissed. The hands and face must be washed; the room kept cool and fresh, but not cold. No mechanical restraint must be attempted, but the patient governed by a calm, gentle, yet firm and positive manner. Food must be offered of a quality and kind suited to the state of the stomach; at first it is often refused or abhorred (sitophobia), in which case it must be administered in a concentrated form in small quantities at intervals of one or two hours. If the breath smells of drink, it will be expedient to await the elimination of the poison, and nothing more than a purgative should be given medicinally, unless there is reason to suspect an overdose, when a gentle emetic may be prescribed, and the stomach emptied. After the direct effects of the alcoholic or other drink have passed off, the practitioner will be able to determine the true characters of the case, or at least so far as they are modified by the intoxicant used. The patient should be examined carefully, as opportunity offers, for any complications; more especially the attention should be directed to the *head*, to determine whether any injuries have been inflicted on it recently, or previously; to the *lungs*, with reference to pneumonia,

bronchitis, and acute congestive affections, and as to these physical diagnosis is essential, because the ordinary symptoms are often absent in consequence of the state of the brain; to the *heart* and *pulse*; to the state of the *liver*; and to the *kidneys* and *bladder*, as to retention of urine, albuminuria, etc. Inquiry should be made as to the habits of the patient, and the kind and amount of intoxicant taken; as to the previous treatment, especially with reference to opium and stimulants; and as to any predisposition to cerebral disorder. When the case has been thus examined as to its course and complications, and when the true character of the hallucinations, etc., is manifested, *independently of the direct influence of the intoxicant drinks or drugs*, as opium, or other nervines (and this is most important), the practitioner is in a position to establish his diagnosis and prognosis. Taking the character of the mental disorder as the starting point, it may be generally stated:—

1. When the mental disorder is of the opposite character to that already described and named as melancholia, that is to say, when the patient is gay in manner, or aggressive, or furious, and not timid, restless, and apprehensive; or when the illusions and hallucinations from the first are joyous and pleasing, and not distressing, gloomy, or monstrous, it is not a case of delirium tremens, and the prognosis is doubtful. When other causes of cerebral disorder can be assigned besides drunkenness, or there is a history of insanity, this diagnosis and prognosis is more certain. Dr Gairdner's experience affords an instructive example of this kind of case.

"W. A., æt. 42, admitted 7th January. This is a very interesting case, and a somewhat doubtful diagnosis at present. . . . He was a habitual drinker on Saturday nights, but seldom got absolutely drunk. During the week before the New Year he took about a pint of ale or a glass of whisky every night, and we may easily suppose he did not quite abstain at other times, or after the New Year in particular. Still his wife believes that his present state is not owing to drink; and he himself connects it in some measure with the calamity of the fallen house in the High Street on 24th November last, which, he says, affected his mind deeply at the time. He is quite sensible that his mind is wrong. He has no tremors, and no spectral illusions. He is quite happy and cheerful, as is often the case in delirium tremens; but he has not, I think, the special appearance and manner of delirium tremens, nor the restless preoccupation of the mind, nor the unconsciousness of internal wants, nor even of his own condition, which is usual in that disease. His case rather resembles acute mania when subsiding. Here is another point in favour of the diagnosis. He was quite a furious maniac when admitted; and since this, though he has not had good sleep, he has had some sleep,—at all events he has become much less violent."—*Clinical Medicine*, p. 284.

In this case there was not the history and none of the pathognomonic characters of delirium tremens, but the opposite,—“He was raving mad when admitted, and required restraint.” When the excitement remitted he had no tremors nor spectral illusions, and was quite happy and cheerful. It was not, therefore, a case of delirium tremens, but of mania, and would terminate therein. And such is the sequel of the history; for Dr Gairdner, after premising that his doubts of the true character of the case were well-founded,

adds, "In twenty-four hours he was quite mad again, in fact worse than ever; we had to put him into one of the padded rooms, and there he lay shouting, and swearing, and roaring all sorts of filthiness, without the slightest coherence."

2. When the hallucinations and delusions are characteristic in the beginning, the apprehensiveness and restlessness not strongly marked, and the character of the mental disturbance gradually changes into the aggressive, sullen, or maniacal kind, the prognosis is unfavourable; the case is likely to end in chronic disease. Case 8 in my last paper is an illustration. It is that of a tailor who came into the house of his own accord to get rid of "crowds of cats which assailed him in the streets in every way with claws and abusive language." The man had been severely beaten about the head, when drinking continuously, with a heavy wooden mallet. He gradually lapsed into mania; being first gay about his cats he became sullen and morose, demanding to know why he was detained; and after being under treatment five weeks, was dismissed as a candidate for admission into an asylum.

3. When the mental disorder is like that of acute mania, and the paroxysm has been excited by small doses of wine, spirits, or opium, in a person of very excitable habit, or with a predisposition to insanity, or who has previously experienced an injury to the head followed by a change in character, the prognosis is favourable; the case is likely to end in a few days under simple treatment. This kind of case is a species of recurrent maniacal delirium excited by intoxicants. From other causes it is not uncommon in asylums in cases of chronic and remittent mania.

4. When furious delirium or maniacal excitement succeeds to a melancholic condition in a young patient, and it is ascertained that there has been an entire want of sleep and abstinence from food, the prognosis is favourable, in the absence of cerebral predisposition, and in proportion to the youth of the patient. In cases of this kind the cerebral excitement is like that which occurs in starvation, and the intensity of the symptoms indicates the degree of imperfect nutrition of the brain and the blood which want of food and sleep greatly induces. Since, after the prime of life is passed, the nutrition is imperfect, other things being equal, in proportion as age advances, the age becomes an important element in prognosis; for the older the patient the greater the probable danger to the brain, and the less vigorous the restorative power of nature. Such may end in chronic mania or dementia.

5. When in a melancholic or typical case, with no serious complications, the illusions and hallucinations are as to perceptions of touch or of common sensation, especially of the skin of the trunk, the prognosis is favourable, and sleep may be expected to come on without a hypnotic. Of this class are all those illusions which point to the skin, as of lice, beetles, or cockroaches crawling over it. When, also, they refer to the limbs and deeper parts, and are

such as show that they are due to neuralgiæ, the prognosis is favourable. If, however, the tactile and sensational illusions are referred to the head, as of persons boring into the skull, or pouring fluids, or putting things into the ear, the prognosis is more doubtful, and there is danger that the case may end in insanity.

6. When the illusions and hallucinations are of a gloomy and monstrous character, yet the patient has neither terror, apprehension, nor tremors, and the drinking bout has been preceded by symptoms of insanity, the prognosis is unfavourable; the case is likely to become chronic as developed insanity ending in dementia. This absence of fear or terror when the hallucinations are such as ought to excite emotion, is very characteristic of this class of cases.

7. When, after a drinking bout, or habitual intemperance, melancholia is developed, with auditory and ocular illusions, but unaccompanied by tremors, and when at the same time the feelings are involved, so that the delusions are unfounded suspicions, jealousies, and the like, and the patient is sullen, the prognosis is not favourable; the case is likely to terminate, sooner or later, in aggressive or homicidal melancholia of a serious or incurable kind, according to the age and other conditions of the patient.

8. When, in the last-mentioned kind of case, there is a history of sexual excesses as well as of intemperance, and the corporeal illusions are of an indescribable kind, referred in a vague way to the joints, limbs, and viscera, and when auditory illusions of abusive voices are prominent, the prognosis is unfavourable; the case is likely to end in insanity, with the delusions fixed.

9. When the patient is melancholic, has been a hard drinker, and has experienced much gastric disorder, as loss of appetite, vomiting, and intense epigastric sinking,—if there be no important cerebral or visceral complication, the case will end favourably in a week, although the delirium and hallucinations may be of the most striking character.

10. When the patient has been a hard drinker, and there is a complication, yet not important in itself, as a slight gouty attack, hepatic congestion, gastritis, bronchitis, influenza, a limited pneumonia, a diarrhœa, and the like, the case will terminate favourably within fourteen days, even although the delirium may be more aggressive than melancholic. Here, however, a marked tendency to insanity, or previous attacks of mental disorder, will indicate caution.

11. The kind of intoxicant used may help the prognosis. When the type is profoundly melancholic, after the use of distilled drinks or opium, or when tremors, convulsive twitchings, and convulsive attacks follow on the use of bitter fermented drinks or "bitters," the prognosis is favourable. Cider seems to predispose to rheumatic complications. This and all the preceding statements have reference, it must be remembered, to the condition of the patient not less than twenty-four hours after he has ceased to take the intoxicant, and when, therefore, it does not directly modify the symptoms.

Medicinal Treatment.—Since a case of delirium tremens tends, independently of active remedies, to a favourable termination in from four to fourteen days (the cases I have treated have averaged six days' duration), the great indication of medicinal treatment is to favour this tendency, in *expectation* of early recovery. It is favoured by preventing as well as by helping. The natural impulse to interfere by the aid of narcotics and stimulants, or by mechanical means of restraint, has to be checked. This is best attained by adopting a plan of treatment which occupies and gives confidence to the attendants and friends, and at the same time calms the patient. The effects of medicinal agents or drugs used to this end cannot be satisfactorily determined in many cases, because we cannot say, when calm and sleep come on, how much is due to the drug, how much to the diet and regimen, and how much to nature; so that all experience upon this point is somewhat doubtful. It is certain, however, that drugs have and do exercise an influence over the intensity of the symptoms, although they may not either cause sleep or shorten the duration of the disease. Of these, opium and its salts, tartar emetic, digitalis, chloroform, purgatives, alcoholic and other stimulants, are examples.

Alcoholic Stimulants.—These are available in all asthenic forms of delirium, however caused. They have been hitherto administered in the methystic form, chiefly on the theory that the sudden withholding of the habitual stimulant is the exciting cause of the delirium. The depression of the nervous system may be partly due to the want of the accustomed stimulus; but all experience shows that it is still more commonly due to morbid causes of a more general character, such as induce a feverish cold, a fit of indigestion, of the gout, or the like. Without such concauses, abstinence from habitual stimulants will not excite delirium tremens. The habitual drunkard distinguishes the depression which commonly succeeds to stimulation as "the blues;" "the horrors" is a different thing, and occurs when any indisposition induces loss of appetite, languor, disturbed sleep, and other symptoms of the class. It is the depression thus induced by this same morbid cause which constitutes the first stage or simplest form of delirium tremens. The intensity, therefore, is partly, at least, determined by the kind of indisposition or acute affection; and it is this we have to remedy. The indications, therefore, for the administration of alcoholic or habitual stimulants must be drawn from the then condition of the patient, just as in other diseases in which remedies of this class are useful. When food has not been taken for several days, and the hallucinations are of a frightful or distressing kind, and especially when the pulse is very quick and feeble, the first sound of the heart heard indistinctly, the tongue coated, cedematous, and flat, or indented at the edges, wine and brandy may be administered medicinally with advantage. Sometimes this state of prostration is due to the combined influence of

drinks and opium or its salts, or to opium alone. In either case, alcoholic stimuli may be given. The following is an example:—

Delirium Tremens and Poisoning with Laudanum and Brandy. Delirium Suicidal. Tremors excessive: Fourth or Fifth Attack. Duration about Eleven Days.

(Reported by Dr JOHN SIMPSON.)

J. S., a broker, aged 52, admitted into the Royal Infirmary on 29th May 1862. It is his fourth or fifth attack of delirium tremens. He was intoxicated and under the influence of opium when admitted, his friends having given him brandy and laudanum that he might be quietly conveyed to the Infirmary. Has been drinking brandy, porter, and ale for the last ten days, but no whisky, as he had made a promise to that effect when in the Infirmary on a previous occasion. Sometimes he does not take drink for two years. His appetite is generally bad, and his bowels constipated; complexion dingy; countenance very anxious. Intoxication having passed off, he feels extreme remorse for his conduct. Nights wholly sleepless. His tremors are so violent as to shake the bed. Complains of a dull aching pain in the head and ringing in the ears. Tongue flat and moist, but coated; pupils contracted; conjunctivæ icteric; has hallucinations, when he shuts his eyes, of bears, and dogs, and animals he cannot describe, which walk round his bed as if to attack him; also giants, who make faces at him and tease him.

Treatment.—A purgative enema; strong beef-tea, with or without small quantities of brandy, according to the state of pulse. On 2d June ordered nitrate of silver and muriate of morphia, as the stomach was exceedingly irritable. In the evening the pulse was 130 and weak, and prostration great. Ordered from four to six ounces of brandy, to be taken in small doses over twenty-four hours, either in water or strong beef-tea, as the stomach would bear.

Progress of the Case.—Little or no sleep for several days; the mental affection more and more developed. 31st May.—Fancied he saw the devil and a large black dog in the water-closet, and a sow in the ward, and that vermin were crawling over him. 1st June.—Same hallucinations; but also sees a number of people in the ward mocking him. 2d June.—Tried, when in the water-closet, to commit suicide by strangulation, thinking he heard his wife say, “Go and hang thyself.” Believes he has attended his own funeral, and called out to imaginary persons at the window that they would find his body at the Infirmary. Complains that cockroaches and flies are going in and out of his ears. 3d June.—Last night endeavoured to throw himself out of bed. Fancies the lower end of the bed rises so that he rests on his head (vertigo), and to obviate the result, he advances his body forward. Affirms that his hands are charged with electric fluid, which dissolves anything put into them, and had in fact dissolved an old gentleman’s watch; that children are attached to the top of the room, and that if he moves his eyes from them they will fall. Hears brass bands playing very beautiful music. 4th June.—Is constantly talking in a low tone about his business. Tremulousness still very great, and nights sleepless; often attempts to get out of bed. During the last three days has had four ounces of brandy in the twenty-four hours, in small and frequent doses, and beef-tea freely.

5th June.—Slept for eight hours during the day, and the whole of the following night. 6th June.—Free from all hallucinations. 9th June.—Quite well, and dismissed cured. Duration of treatment to sleep coming on, nine days.

This case is an example of the most severe and troublesome type of the delirium, and would, I think, have terminated fatally under the old Infirmary method of laudanum and whisky.

Opium and Salts of Morphia.—The influence of these drugs is very various; in one class of cases having the most beneficial effect, in another increasing greatly the excitement and delirium. The

like difference in effect is seen when given in cases of melancholia and mania, for which they have been freely prescribed. In some of these, as in some cases of delirium tremens, very large, and, under ordinary circumstances, poisonous doses have little effect. This tolerance of opium in certain forms of delirium tremens has probably led to its heroic administration in cases generally. A question has arisen, whether, in those thus treated which terminate fatally, the death is due to the drug or the disease. Dr Watson thinks not. He observes—

“When these patients die, . . . they are apt to die much in the same way as patients who are poisoned by opium; and if their friends are aware that we have been giving large and repeated doses of the drug, they sometimes have the charity to lay the death at our door.”

Commenting on a fatal case in his own practice, he says—

“The manner of dying was just such as opium will produce, but then death by coma is also frequently the termination of delirium tremens. Effusion at length is apt to take place into the ventricles or into the meshes of the pia mater, and stupor comes on and the patient sinks. But in this instance I was certain that his death had nothing to do with the opium he had taken, for this reason, that so long a space of time had elapsed—nine hours—between his taking the opium and the coming on of the comatose symptoms.”

Dr Watson's case is so highly illustrative of the mode of death by opium in these cases that I quote it. The delirium of the patient was not of the melancholic type, nor the hallucinations of a distressing character; he was a horse-keeper in a large way, and was busy with the execution of imaginary orders and other business matters. He was fifty years old, had been a hard drinker, and had been very anxious about his business. Thus predisposed to cerebral disturbance—

“He had been attacked some days before with sore throat, common cynanche tonsillaris. The tonsils and fauces were so much swelled that his deglutition had been greatly impeded, and for four or five days he had scarcely been able to swallow anything. The night before I saw him he had become delirious, and then had been largely bled, and he was worse in the morning. His bowels had also been very much purged. I found him propped up in bed with a coronet of leeches round his head. . . . I recommended that the leeches should be removed from his head; that he should take immediately (for he could swallow now) two grains of opium, and afterwards twenty drops of laudanum every two or three hours until he fell asleep. . . . For some reason or other only one or two doses of the medicine was taken. . . . The patient did not sleep. At night, therefore, at ten o'clock, three grains of opium were administered. The result of this was, that he passed a quiet but sleepless night. Perhaps (but I cannot be sure of that) if the opium had been persisted in, the case might have terminated otherwise. About eight o'clock the next morning I was summoned to him in a great hurry; when I got there he was dying, perfectly comatose, breathing stertorously, with blue lips and contracted pupils. He had appeared so much better at seven, that he was, for the first time, left alone for a quarter of an hour, and when they went back to him he was changed in the manner described.”—*Lectures on the Practice of Physic*, vol. i., 4th edit., p. 416.

This mode of accession of fatal or serious cerebral lesion is seen in other diseases. “A lightening before death” is seen in demen-

tia,—a feeling of wellbeing before apoplexy, of cheerfulness before a paroxysm of melancholia. When this patient appeared to be so much better he was beginning to die, probably from a change in the cerebral circulation, which rapidly passed into effusion from the capillaries—acute cedema, in short. Now, this condition, I am satisfied, may be induced by opium. Dr Graves' opinion, therefore, expresses I think more nearly the effects of large doses than Dr Watson's, when he says—

“Opium, if given in the beginning, will increase the congestion and bring on sub-arachnoid effusion. I treated a case of delirium tremens in this way too boldly, and the man died with sub-arachnoid effusion. It was a lesson to me, and I advise you to profit by my experience.”—*Clinical Lectures*, vol. i. p. 530.

Dr Watson attributes the effusion to the disease, and says, death frequently occurs in this way; but then, his exclusion of the opium from causation is founded on a deduction from the experience of its effect on healthy persons. This is not, however, the kernel of the question; we want to know what are the effects of opium when tolerated in large doses in morbid states of the encephalon, such as are induced by habitual drunkenness, or by the administration of large doses of alcoholic drinks. That there is a delayed action of the opium, such as Dr Watson's case exhibited, in so far as we may judge from the manifestation of its poisonous effects in these cases, is proved by the summary of Dr Christison's experience as to the effects of opium, which Dr Watson gives in support of his doctrine.

“Dr Christison, in his elaborate and valuable work on Toxicology, states it as the result of extensive inquiry into this subject, that when opium has been swallowed in a poisonous dose, it always begins to act as a poison within an hour; that very rarely, indeed, has its specific operation been postponed much beyond the hour, except, occasionally, when the person taking it was intoxicated at the time. In one remarkable instance a drunken man took two ounces of laudanum, and no material stupor followed for five hours. I guess that I incurred the reproach of recommending a fatal plan of treatment in the particular case I have now related; but I am quite satisfied that the opium was innocent of the patient's death.”—*Lectures*, 4th edit., vol. i. p. 416–17.

My own conclusions on this point are, that the combination of alcoholic drinks with opium tends to render the patient more tolerant of the drug; that in some drunkards its operation is so much delayed, that when given in repeated doses, there is a cumulative effect produced; that it is never a wholly safe practice to administer it for the express purpose of procuring sleep, nor as a stimulant in more than the ordinary doses; and that it is always prudent to watch the effect of the remedy on the pupils in exciting contraction. How far various other states of the encephalon may antagonize the drug, and for how long, we never perhaps can say, but that there are such states variously induced is one of the most certain things in physic. We have it in cases of both mania and melancholia, in certain kinds of neuralgia, in traumatic tetanus; and it is believed that it may be induced by henbane, belladonna, and other drugs. And it is to be remembered that the antagonizing

state may be so transient as to leave the brain exposed to the full action of the poison before it is eliminated,—nay, by its action on other viscera may delay the elimination. I humbly think that all the facts are in favour of the conclusion, that in a case like that detailed by Dr Watson, the drug is lethal.

Be this as it may, such a case as Dr Watson details, if treated according to the expectant method, would not have been treated by opium at all. It was a case complicated with heroic treatment as well as by previous hard drinking and anxiety; but the delirium was not of a kind to indicate serious encephalic lesion, with a tendency to insanity or death. In an acute case of cynanche tonsillaris like this, even if the delirium had been much more distressing and more characteristically methystic, we might fairly *expect* the patient to recover within 7 to 14 days, rather than to die, and all that we need aim at would be such *expectant* treatment as the case required; in this particular example, nutrient enemata with wine so long as the patient was unable to swallow, then concentrated food by the mouth with wine or small doses of brandy. When the inflammation is of a more sthenic type, tartar emetic may be administered in combination with small doses of laudanum.

Camphor.—It is not easy to determine beforehand when opium or its salts serve only to induce greater prostration and distress; most generally, however, the patient is of a nervous habit with a florid complexion, or at least has had, and is of a neuro-vascular diathesis. In cases of this kind where the exhaustion is great and morphia inadmissible, camphor proves sometimes useful, in from two to three grains every three hours, or the carbonate of ammonia combined with camphor and henbane.

Mental Hypnotics are singularly successful in those cases in which there is a morbid apprehension as to sleepless nights, and a hypochondriacal anxiety for sleep. It is often the morbid feeling alone which prevents sleep: this is proved by the circumstance, as repeatedly witnessed in my practice, that any simple remedy administered to the patient so as to impress him with the conviction that it will cause sleep, is followed by sleep; and sometimes, when convalescence is approaching, by as prolonged a sleep as if a powerful narcotic had been taken. In one case of this kind the long sleep which followed upon a placebo excited alarm.

Tartar Emetic.—This drug, like opium, has been administered in large doses in delirium tremens; the effect of which, I venture to say, can only be to excite gastric or gastro-enteric inflammation. Now, it is probable, counter-irritation of the gastro-intestinal mucous membrane is very beneficial in some cerebral affections. Perhaps calomel sometimes acts in this way in acute hydrocephalus; but in the majority of cases of delirium tremens this result is attained by a simple purgative, and care should be taken to avoid irritating the already irritated stomach. Tartar emetic, therefore, should be administered in solution, and in doses not exceeding 30 minims of

the liquor of the Pharmacopœia. It is chiefly indicated in those cases in which there is some inflammatory complication, and especially pneumonia, however trifling. It is advantageous, too, at an early period in those in which the whole character of the disease is more sthenic, and the mental disorder more nearly approaches insanity or mania. In these the patient is less apprehensive and timid; often loquacious, suspicious, and inclined to be aggressive upon slight provocation; he has notional delusions more predominantly than hallucinations of the senses; his nights are disturbed, but not wholly sleepless; nor has he tremors of importance. His appetite comparatively with the asthenic form is little impaired; his tongue but little coated, and when projected rather pointed and firm, than flat, flabby, and tremulous. His skin, too, is rather hot, or at least natural, than cool and moist; and the pulse is less round, undulating, and quick. Cases of this kind are intolerant of stimulants and opium even in small doses, these being apt to change a "cantankerous" kind of delirium into a raving or destructive sort; whereas 20 to 30 minims of tartar emetic liquor, given every three or four hours, calm, or at least do not aggravate. When, however, there are symptoms of depression, especially in a young person, and the history is that of causes of exhaustion, laudanum in 5 to 15 minim doses is a useful stimulant, in combination with 15 to 20 minims of the liquor. This has long been found useful in ordinary maniacal delirium thus arising.

Emetics, Purgatives, and Stomachics.—Methods of treatment by purgatives, quinine, and tonics have been recommended. The patient before coming under treatment has usually tried remedies of this class, especially bitter drugs, either as bitter tinctures, "the bitters" of the dram-shop, or in bitter beers. The effect of these is to modify the symptoms, and especially to induce muscular twitchings, tremors, and even slight convulsive attacks. Very often in such there has been a total loss of appetite, and no food has been taken for several days. In some, food is vomited, in others, if retained, it causes pain, because of the state of the mucous membrane of the stomach. This is often, in fact, congested and inflamed. Hence the dietetic and medicinal treatment of gastritis is indicated; constipation and hepatic congestion are not uncommon complications, and indicate a suitable aperient. Podophyllin, calomel, colocynth and henbane, castor oil, salts and senna, and Gregory's powder, were the ordinary remedies of this kind used in the Infirmary. Of the new drug as a bilious purgative I can speak favourably. Podophyllin was prescribed in several cases in combination with cannabis indica or henbane, with good effect. The following formulæ were used:—℞ Podophylli, gr. ij.; Pulv. cinnamoni co., Extract hyoscamī, āā ʒ; mucil., q. s. The mass to be made into four pills, of which one to be taken every six hours until the bowels were moved. In another formula, gr. viij. of powdered ginger, and of extract of cannabis indica were combined with gr. iij. of podophyllin,

and made into six pills. The purgatives, of whatever kind, were always given at the commencement of the treatment and not afterwards. Emetics were never tried, and were never indicated except in cases of drunkenness. Stomachics were prescribed in a few cases at the termination, when convalescence was established, but were rarely needed.

Digitalis and Chloroform.—There is evidence of the calming effect of digitalis, but it is of the vaguest kind. There is no indication of the class of cases in which it may be safely prescribed, nor are we clearly informed whether in the cases reported there was not renal or cardiac disease, or the complication of drunkenness or of narcotization. I have seen it tried in one case, in which, in consultation with a medical friend, it was resolved to try a half-ounce dose of the tincture. The patient had had a drinking bout, and suddenly became aggressive and destructive, tearing, pulling down and burning, and striking and throwing things at the attendants. There was no loquacity: the patient rarely spoke, but sat in bed, rolling up the bedclothes, tearing off his clothing, and throwing food and drink in the faces of those who offered it. This he did with his dose of tincture of digitalis, after drinking one-half of it. The case was one in which the expectant treatment was thereupon tried with entire success,—reason being restored and convalescence established within the week. Chloroform has been administered in very violent cases with advantage: when exhaustion is likely to come on from the constant raving and struggles of the patient, it may save life by saving strength. Such, however, are rare, and are more frequently met with as the result of heroic treatment than in the ordinary course of the disease.

There were two or three cases of puerperal mania (so called) admitted into the Infirmary and Milnholm Asylum during the summer, and were treated on the same principles as the cases of delirium tremens. One of these brought to the Infirmary had fallen into a raving delirium after taking morphia. They were, in truth, acute cerebral affections, of which parturition, or the puerperal state, was the exciting cause, and recovered within a short period. How far albuminuria is a cause or an effect of the morbid state of the encaphalon, in this class of cases, has yet to be determined, although it is commonly assumed to be the cause. In none of the cases I have treated was there any important renal complication, nor was albuminuria detected, although the urine was carefully examined. Renal disease, especially albuminuria, is amongst the rarer complications of insanity.

RUTLAND STREET, EDINBURGH, *October 1862.*

ARTICLE II.—*On Uterine Hæmatocele: Experience in the Royal Infirmary of Edinburgh.* By J. MATTHEWS DUNCAN, M. D., Clinical Lecturer on the Diseases of Women.

IT is an extraordinary and inexplicable fact, that uterine hæmatocele—a disease not of very great rarity, frequently forming tumours of enormous bulk—should have almost completely escaped the attention even of special practitioners in the diseases of women until about twelve years ago. Text-books and teachers were all silent on this important disease, till the clinical lessons of M. Nelaton on the subject were published. Now, the disease will never be forgotten. It is, indeed, easily identified; and out of several cases which I have seen, I shall in this article relate six which have come under my care in the Royal Infirmary during the last eighteen months. To the reader it will be evident that these cases have all similar symptoms; but that the physical characters are very different in different examples; so different, indeed, as to preclude the supposition that the effusion of blood has taken place in all of them in the same anatomical situation and conditions.

Although the disease is easily identified, and its general characters are well known, many important points in its pathology are still unsettled. It appears to me that the chief of these regard the difficult questions of its various origins and of its various situations. That in both of these matters there is no uniform law, but difference in different cases, I am convinced. To explain its origin, every possible source of bleeding in the neighbourhood of the affected parts has on different occasions been invoked; and many have been substantiated by post-mortem investigation. In regard to its anatomical site, two principal theories are enunciated. The first, that the blood is as a rule effused into the peritoneal cavity, is held by most continental pathologists, and has been defended at very great length by M. Bernutz, in his clinical work on the diseases of women. It has also the important support of a great majority of the recorded careful post-mortem examinations. The second theory, that the blood is effused into the cellular tissue of the higher parts of the pelvis, is entertained by several physicians in this country, but chiefly on theoretical grounds, for post-mortem observations confirmatory of this view are unfortunately few in number. It has been attempted to connect some points in the progress and history of the disease with the anatomical relations of different portions of the pelvic fascia; but hitherto this attempt has been only in words, or in descriptions having a confused hypothesis for their basis. The question is one which morbid anatomy alone can settle, and it is to be ardently desired that autopsies bearing on this point should be recorded. I do not say autopsies only of women dying of this disease, for it may well happen that the greater fatality of the intra-peritoneal form may lead to an erroneous opinion of its frequency

and importance. It is natural to suppose that the extraperitoneal form of the disease should seldom cause death, and the opportunity of examining it after death be very seldom met with; but this rarity of the extraperitoneal form in autopsies is not a conclusive argument for the rarity of its occurrence when compared with that of the probably more fatal intraperitoneal affection. Pathologists must, therefore, anxiously wait for autopsies in cases of death from any cause, in women who have had uterine hæmatocele complicating the disease producing the fatal result.

That intraperitoneal hæmatocele often occurs is proved by numerous post-mortem examinations, and it is as natural to expect its occasional occurrence as it is easy to find in various sources of the hæmorrhage a satisfactory explanation of it.

The occurrence of extraperitoneal hæmatocele has been but seldom verified by post-mortem observation. But it has always appeared to me to be probably a common form of the disease. The remote analogies of cephalhæmatoma, of pulmonary, splenic, and placental apoplexies easily suggest themselves. It is more to the point to recall to mind the well-known thrombus of the vulva, and the occurrence of similar effusions beneath the walls of the vagina, which last I have several times seen in post-mortem examinations of women dying in childbed. It is, besides, ascertained that sanguineous effusions do sometimes take place between the two layers of peritoneum forming the broad ligaments, and I have, in pregnant pigs made the subject of vivisection, seen extensive effusions of the same nature in a corresponding situation. Further, it has appeared to me difficult, if not impossible, to expect the complete, or nearly complete, return of the mobility of the uterus, and of the softness of the roof of the vagina, if the effusion be intraperitoneal, the blood enclosed by adhesions of the viscera, and the disease cured by evacuation of the sac, its suppuration and gradual collapse. Pregnancy even has been prosperously completed in women who have previously suffered from uterine hæmatocele. This returning mobility and general state of health I have observed in a retro-uterine hæmatocele of great extent to be presently recorded. Again, in what I call the characteristic retro-uterine hæmatocele there is strong and far advancing pressure downwards of the effused blood, great distension apparently of the recto-vaginal septum, so close approximation of the tumour to the perineum, and so great elevation of the uterus, that it is difficult to suppose that the advancing mass is pushing the peritoneum before it. Moreover, in large hæmatoceles, there is sometimes little tenderness; and, what is still more important, the tumour can be felt projecting upwards into the abdomen, very like the liver projecting downwards in cases of hepatic enlargement, though with a more rounded margin (as in case fourth), and manipulation detects as little feeling of adhesion of the bowels around the hæmatocele in the one case, as to the liver in the other; and, in the latter, we often ascertain that no adhesions exist

For the final settlement of this interesting subject, we must be content to wait till the accumulation of careful observations, both before and after death, throws light upon it. A similar difficulty involves the pathology of pelvic abscess, or pelvic peritonitis; one set of observers, with M. Nonat, defending the extraperitoneal site of these indurations and abscesses; another set of observers, with M. Bernutz, defending the doctrine of their intraperitoneal situation. As in the case of hæmatocele, it is probable that truth is not confined to either side. And, again, as in the case of hæmatocele, it is desirable to be able during life to diagnose not only the inflammation or the bloody effusion, but also their anatomical relations.

In the cases to be recorded, the exciting causes of the disease, so far as could be made out, were coitus during menstruation, suppression of the menses by cold, and irregularity of the menses. In two cases in which this last exciting cause was traced, the women supposed they were pregnant, and the author was so far inclined to acquiesce, as to suspect the co-existence of extra-uterine pregnancy, and watch for any evidence in support of it that might be gained from the discharges, but nothing appeared to corroborate the supposition.

The state of the effused blood varies in different cases. In the fourth case now recorded it was felt *in situ* by the finger passed through an artificial opening, and found to be in the condition of moderately firm clot, but at the lowest part of the same tumour was collected a small quantity of bloody fluid of a syrupy consistence, and with an odour of faded leaves. In case third, the condition of the blood was certainly the same in every respect. In many cases the tumour is so small that it cannot be decided whether fluctuation is present or not; but in these two cases the abdominal tumour was large and could be handled, and no fluctuation was to be felt, and the same was true of case second, as hereafter reported. The absence of fluctuation is explained by the solid condition of the blood. In cases third and fourth a little fluid could be felt in the lower parts, which projected deeply into the vagina.

In case first, the tumour, of enormous size, presented most indistinct fluctuation when first examined, but subsequently this sign could be easily made out. The absence of fluctuation in this case may be partly explained by the great tension of the cyst, but was probably also due to the imperfectly fluid condition of the contained blood. Before this was evacuated the fluctuation had become distinct, and, in correspondence with this change, the blood drawn off was of a syrup-like consistence, and had the peculiar odour of faded and slightly decomposing flowers. In all of the cases the blood became of a dark brown colour, and had a grumous or coffee-ground appearance, after the cyst had been open for a short time, and simultaneously it acquired an intense fetor. In none of the cases here recorded, except that of Mrs H., could any pus be detected by the naked eye. In the exceptional case, the surface of

the collected fluid glistened as if with cholesterine scales, and had an iridescence, in so far as it presented at parts a shifting greenish-brown tinge. Under the microscope the fluid evacuated in every case showed abundant blood-corpuscles in every stage of destruction, still greater abundance of large, and not very uniform, pus-like cells, with occasional crystals of the forms of cholesterine and of tyrosine.

It is natural to expect, that as the blood-clots slowly break down and form a syrupy fluid, pus cells from the walls of the cyst should be freely mixed with it. In all the cases, as the blood became completely evacuated, and while the containing cyst became contracted, pus at last became evidently mixed with the grumous discharge until it supplanted it altogether. This purulent discharge, unmixed with decomposing blood, had not a fetid odour. In case third, even though the hæmatocele was very large, this purulent discharge was only of slight extent, the cyst evidently contracting closely on the gradually departing blood.

I may here remark that I have operated on cases of large peri-uterine hæmatocele, in which blood and pus were evidently com-mixed. But in these cases the disease was of long standing. I recall to mind one apposite and very interesting case of a lady who came under my care some years ago, whose disease had been diagnosed in London as a fibrous tumour, and in Edinburgh erroneously likewise, and from whom I drew off by Pouteau's trocar, at successive operations, nearly two pints of fetid pus mixed with old brown blood, one half being evacuated by puncturing per vaginam a tumour at the brim of the pelvis and on the right side of the os uteri, the other half by a like operation on the left side. The poor sufferer was only deprived of the deceitful swellings occupying the hypogastric regions: her painful symptoms, especially severe chronic cystitis, were but little relieved. I mention this case to illustrate the gradual change of an old hæmatocele into an abscess, or how a hæmatocele may suppurate and end in a kind of pelvic abscess. An analogous change often takes place in ecchymosis of the vulva and vagina.

I now proceed to detail six cases of this interesting disease, and I divide them into three classes: 1. Uterine; 2. Retro-uterine; 3. Peri-uterine. I attach little importance to this division, but it is founded on well-marked differences in the physical characters of the cases to be recorded.

Uterine Hæmatocele.

The following case is an example of an enormous hæmatocele, its size being proved by the amount of blood evacuated from it, besides by the physical examination. It is the only one of the six cases here related, where physical examination revealed nothing to lead me to stubbornly disbelieve its intraperitoneal site. Indeed, I think it was probably intraperitoneal. I was at one time inclined

to think that its bulk strongly argued in favour of its occupying a portion of the peritoneal cavity, but the observation of a case of very large false aneurism in the brim of the pelvis and neighbouring iliac region dispelled this notion. This case was successfully treated by Mr Syme, and I witnessed the removal of the clotted contents of the sac in the course of the operation, in which the peritoneum was left intact.

CASE I.—Mrs M., æt. 28, sterile, had till recently enjoyed good health. About June 1861, she had a very painful menstrual period. In the beginning of October she was menstruating, and on the second day of the flow she felt a painful coldness while sitting in the open air on a stone. On the following day she was suddenly taken with a violent indescribable abdominal pain and swooned. She remained faint and insensible for two days, and was considered to be dying. When consciousness returned she had great pain in the abdomen, and could feel in the left side of the belly a swelling, which gradually increased. Her bowels were very constipated; she had some sickness and vomiting, but no dysuria.

On her admission on the 9th November into the Royal Infirmary, she was very pale and anæmic, had a hot skin, a foul tongue, and her pulse was 130. The abdomen was greatly distended with flatulence, so that the large tumour in it could only be very indistinctly felt. This tumour occupied the left side of the belly, and extended towards the right also. The line of absolute dulness extended from above the level of the navel on the left downwards towards the right iliac region. The tumour was nearly solid, elastic, moderately tender, but the seat of much pain and feeling of distension even to bursting. Examination per vaginam revealed nothing but some fixation of the uterus, which was somewhat elevated and surrounded by unnaturally solid tissues. The size of the tumour led to its being diagnosed as an ovarian cyst, into which hæmorrhage had taken place; but its subsequent history removed any difficulty as to the nature of the case.

In the course of a few days the sign of fluctuation in the tumour became gradually perceptible, and it became apparently much larger from diminution of the flatulent distension. The woman's sufferings did not diminish. On the 15th November I tapped the abdomen in the ordinary way, about an inch and a half below the umbilicus, and drew off 115 ounces of syrupy blood, showing, under the microscope, abundant pyoid corpuscles. This was followed by almost complete relief of her sufferings and by improvement of her general condition. She continued well upon the whole, only suffering from constipation, flatulence, and occasional vomiting till early in December. At this time her former symptoms returned to a slight extent. But on the 10th of December the tapping puncture spontaneously reopened, very large quantities of bloody fluid were discharged, and she became, according to her own account, quite well. Frequent flowing discharges of many ounces of fluid continued to take place. The cyst rapidly and steadily diminished in extent, so as not to equal the bulk of a small foetal head when last felt. The fluid discharged became gradually more and more purulent. The poor woman was so well that she could not be induced to stay in the hospital, and went away in the end of December.

The following case closely resembles the former in its physical or anatomical characters, and is classed with it. The hæmatocele was not nearly of so great size as that of the first case, and, when the belly became soft and could be handled, the facility with which the parietes could be depressed above the tumour was felt to be hostile to the supposition of its upper wall being formed of coherent

intestines. This depressibility of the abdominal wall around the upper margin of the tumour was not present in the first case.

CASE II.—M. T.,¹ æt. 21, was unmarried, but had cohabited with a young man for a year before her illness began. In July and August she had menstruated a week prematurely, and for some months past the discharge had been scanty. On September 1st, sexual connexion during a menstrual period caused her much pain, but she had no immediate further suffering. After this occurrence she again (September 11) had a painful and injurious coitus. On the following day she had much abdominal pain, and consulted a medical man. For two days further she was able to move about, but was afterwards confined to bed, the pain becoming aggravated. A week after the last-mentioned painful coitus, she had a new and most intense pain above the pubis and in the left iliac region, and now, for the first time, felt a swelling in that situation. She now came to Edinburgh, and was admitted on September 21 into the Royal Infirmary. She complained of great pain and tenderness in the abdomen, with frequent bilious vomiting and diarrhœa. Pulse rapid, tongue coated, skin hot. The chief seat of pain and tenderness was a hard, solid tumour, occupying the whole left iliac region, rising here and on the mesial line about an inch above the umbilicus, its upper margin sloping downwards, from a little to the right of the navel, towards the anterior inferior spine of the right ilium. The uterus was fixed, its cavity three and a half inches long, its cervix small and hard. The uterus was elevated and displaced to the left of the mesial line; and although the mass of the tumour was on the left side of the belly, the hardness, which occupied the whole posterior three-fourths of the brim of the pelvis, was most distinct and easily reached by the finger on the right side. As in the former case, there was no recto-vaginal bulging. In the anterior parts of the brim of the pelvis there was no induration; and manipulation of this region, externally and internally at once, showed that the tissues were soft and compressible. Menstruation began on the day of admission and ceased on September 25. The discharge was red and not fetid. She again began to have a menstrual-like discharge on September 28, and it lasted for four days. The discharge was bright and not fetid, and in moderate quantity. On September 28th she began to feel decidedly better in every respect, and the tumour began to decrease rapidly. On the 2d of October the upper margin of the tumour was an inch below the umbilicus, and except the somewhat tender hypogastrium, all painful symptoms had gone. She even wished to get out of bed. No bloody discharge from the tumour took place in any way. From this time the tumour went on steadily decreasing. The general health also was quite restored. On the 17th October there was resonance over the whole hypogastrium, but hardness could still be easily felt on pressing the region of the brim of the pelvis. On examination per vaginam the uterus was found in its natural situation, reduced in size, and slightly mobile, the whole remains of the bloody tumour moving consentaneously with it.

Retro-Uterine Hæmatocele.

The two cases to be related under this head so closely resemble one another in every respect, that they cannot but be classed together. The position of the tumour behind and below the uterus, the displacement of that organ upwards and forwards, justify the term retro-uterine. This term has been improperly applied by many authors to uterine hæmatoceles generally. All uterine hæma-

¹ The following notes are derived from a fuller report by Dr Ketchen, house-physician to Dr Gairdner, in whose ward the case was observed. The reports of other cases in this paper are condensed from the hospital books kept by my own clinical clerks.

toceles are not retro-uterine. The two first cases recorded in this paper are not properly retro-uterine, at least not in the sense of the tumour having the same relations to the womb as in the third and fourth cases. I was at one time disposed to ascribe the characteristic retro-uterine position to the greatness of the size of the tumour in such cases; but the study of the first case here recorded has dispelled this notion as untenable. In that case, if size or extent of effusion produced distension of the recto-vaginal space, then such distension certainly ought to have been present, for the hæmatocele was enormous and the belly was painfully distended.

Retro-uterine hæmatocele is one of the best characterized forms of the disease; and in the records of gynækology many cases are to be met with almost identical with those now to be reported. In spite of the evidence of autopsies proving intraperitoneal situation in some retro-uterine cases,¹ I have found it difficult at the bedside to adopt this view of the site of the hæmorrhage in my cases third and fourth.

CASE III.—Mrs S., æt. 31, had been married seven years, and had born three children in natural labours. Her youngest child was born on November 27, 1860, and was weaned when 14 months old. She had always menstruated regularly; and in January 1861, on weaning her baby, the catamenia, as usual with her, made their appearance. In February there was no monthly discharge, and she thought she was pregnant. Again, in March no menstruation took place. In the beginning of April she was seized with violent bearing-down pain, as if of labour; it soon ceased, but after some hours returned again, and bloody discharge commenced. The pains and discharge, varying at different times, lasted for three weeks. Her strength was much reduced. In the beginning of May her medical attendant discovered a tumour in the right inguinal region, where her pain had been very great. This pain was greatly aggravated during the action of laxative medicine, but relieved after the evacuation of the bowels. In the second week of June a brown viscid discharge began to come away, affording her relief. In the end of June this discharge ceased, and a purulent leucorrhœa took its place. When the disease began she had incessant calls to urinate, and although she became better in this respect, she could not retain her urine above two hours.

She now (July 1) came under my care in the Royal Infirmary. She was anæmic, weak, and her pulse was accelerated; but in her general condition there was nothing farther remarkable.

A large tumour, solid, immovable, and of moderate or liver-like consistence, occupied the right and middle hypogastric regions. It was bilobate in its outline superiorly; the right lobe extending a little above the level of the umbilicus and occupying the right side of the belly; the other lobe, continuous with the former, feeling harder from the body of the uterus forming its anterior surface, occupying the middle hypogastric region and rising to nearly the level of the umbilicus. The true pelvis was completely occupied by a recto-vaginal tumour evidently containing fluid. The finger could be pressed between this tumour and the pubic symphysis, and, on its point reaching above the symphysis, it came into contact with the os uteri, which presented no peculiarity in other respects. A probe passed into the uterus showed that that organ lay in front

¹ For example, see the case reported by Dr Madge in the Transactions of the Obstetrical Society of London for 1862. In regard to that case, I would remark that it is peculiar in the circumstance of the uterus being said to be retroverted; and, therefore, the case is not quite like my third and fourth cases.

of the tumour, and inclined towards the right side of the mesial line, and that its cavity was enlarged to a length of nearly four inches.

On the 4th of July I punctured the tumour, per vaginam, with a Pouteau's trocar, and drew off six ounces of viscid bloody fluid. After the operation a grumous bloody fluid continued to be discharged, and the tumour in the abdomen immediately began to descend, the patient at the same time experiencing great relief. The discharge came away in large quantities when she went to stool. Twelve hours after the operation, fetor of the discharge began, and it appeared to be the cause of considerable febrile excitement. On the 11th of July the uterus again occupied its natural situation, and the length of its cavity scarcely exceeded three inches. The hypogastric tumour had disappeared, and only a hardness could be felt in the brim of the pelvis, where the tumour had been. On the 15th, external manipulation could discover nothing. The uterus, examined per vaginam, was of nearly its natural dimensions, but fixed in the midst of a hard mass occupying the brim of the pelvis, and densest at the right side. After this time the discharge gradually and soon ceased. As it disappeared, only a slight leucorrhœa supplanted it. Menstruation soon returned and recurred naturally; but it was not till after the lapse of six months that the uterus became mobile, and the parts adjoining the roof of the vagina soft and easily displaced by the examining finger.

CASE IV.—Mrs R., æt. 25, had been married seven and a-half years, had enjoyed good health, and menstruated regularly. Six months after marriage she had a miscarriage, but had not been again pregnant, although, when this disease began, she thought herself in that condition, and supposed she had an abortion on the 30th of December 1861. But of this opinion she had no satisfactory evidence.

She menstruated in the beginning of October 1861 for the last time, and thereafter had all the symptoms of pregnancy which she had experienced on a former occasion. In November she began to have pains in the belly, costiveness, and pain and difficulty in making water. In December she had much cramp-like pain in the stomach, and frequent vomiting. In the end of the same month she had for several days a copious white discharge. On the 30th she supposed she had a miscarriage; and then a supposed lochial bloody discharge began, and continued for three weeks. Six days after the supposed miscarriage, she got up, and a pain, or dull soreness, in her left inguinal region, which had existed since the miscarriage, became, on the same evening, greatly aggravated. Presently a tumour appeared in the same situation, and had attained a large size before the middle of January 1862; but about that time great flatulent distension came on, and prevented any one from feeling its limits. The pain and difficulty in urination had disappeared gradually.

She was now admitted into the Royal Infirmary, under the care of Dr Warburton Begbie. Means were successfully used to remove the flatulent distension; and, the general nature of the case thereby becoming evident, Dr Begbie had her transferred to my ward.

Examination on the 30th January 1862 revealed the following conditions:—The entire lower belly was occupied by a solid immovable tumour, larger and more prominent on the left than on the right side, rising at either side an inch above the anterior superior spine of the ilium, and in the middle to near the level of the umbilicus. The tumour felt like the liver: its upper margin was rounded, and could be plainly felt, the wall of the belly being easily depressible, —the impression to the observer being quite hostile to the idea of the bowels being coherent and forming the wall of the tumour. The tenderness was not considerable. On examination per vaginam the finger discovered conditions identical with those described in the preceding case; only the projecting tumour was less globular and more diffused. The uterine cavity was $3\frac{1}{2}$ inches long, and this organ lay in front of the tumour, and to the right of the mesial line.

She had an extremely bloodless appearance, much undefined suffering in the

belly, and was very weak, but no remarkable constitutional symptoms were present.

On 31st January I made, with a guarded bistoury, an incision almost an inch in length in the vaginal tumour, and a few ounces of viscid bloody fluid escaped. The finger passed through the artificial opening detected the repletion of the tumour with soft blood-clots. A probe passed through the same aperture could easily be made to reach any part of the tumour; and its point could be felt through the abdominal parietes.

The discharge soon became extremely fetid, and came away in very large quantities, the woman at the same time experiencing great local relief. Considerable fever with nocturnal delirium came on, and was attributed to putrid infection by the discharges. The greatest cleanliness was maintained, and warm chlorine lotions were abundantly used. The vagina became very hot and tender, and the belly also very sensitive on pressure. But, on the 6th February, her alarming constitutional symptoms began rapidly to disappear: the discharge had become much less in quantity, and the abdominal tumour could only just be felt above the pubis. Before the 15th blood had entirely disappeared from the discharge, and along with it the fetor; but a copious flow of laudable pus took its place. On the 20th of February the tumour was found to have disappeared; only the uterus was fixed, and the surrounding tissues were indurated. She now had an attack of irritable bladder, which was removed under the use of appropriate remedies. It was not till the beginning of April that the purulent discharge ceased. She was thereafter soon dismissed, feeling quite well. Only, examination per vaginam showed that there persisted an indurated state of the tissues around the uterus, itself now of natural dimensions.

Peri-Uterine Hæmatocele.

In the two following cases the tumour was comparatively small, and did not, in anatomical relations, resemble the tumour in either of the two preceding sets of cases. I must, however, admit that I am not convinced that the physical characters of these two cases demand their separation from the uterine and retro-uterine kinds. It is quite possible that, if the bulk of the tumour had increased, it would have assumed the condition either of a uterine or of a retro-uterine hæmatocele. But, as I cannot dare to guess what might have been its history under these circumstances, I retain it in a class apart. The name, peri-uterine, is appropriate to these cases, on account of their resemblance in situation and relations to the common peri-uterine inflammatory indurations, or the indurations produced by pelvic peritonitis. It is important to remark that the fifth case proves an interesting clinical fact, namely, that severity of symptoms is not in direct relation to amount of effusion. Although the hæmatocele was small in Mrs H., the symptoms were very urgent. In this case the discharge of fetid gas from the sac is a curious observation.

CASE V.—Mrs H., æt. 35, had had several children. Her last pregnancy terminated in abortion at the third month, about two years ago. She was at first a patient in a ward of Dr Gairdner's, but was subsequently transferred to mine.

She had been in bad health for many months, had menstruated too frequently, and suffered feelings of weakness and occasionally of pain in the hypogastrium. For three months before admission she had not menstruated at all, and she had never previously been irregular in this respect. Since the menses ceased,

she had observed a slight leucorrhœa, occasionally tinged with blood, but never fetid. About the middle of April 1862 she was suddenly taken with severe pains in the left hypogastric region, followed by swelling and hardness of the lower belly, also by intensely severe bearing-down pains across the sacrum, which continued in a moderated degree till her admission into the Infirmary on the 29th of April. Since the middle of April she has several times required to have her water drawn off by the catheter.

She was exhausted, pallid, and anæmic on admission, and, besides the symptoms just mentioned, complained of pain in defecation, the bowels being very costive. She had pain on pressure in the left hypogastric region, but nothing could be felt by the hand applied externally. She occasionally shivered, and frequently perspired profusely, and had occasional attacks of vomiting. On 3d May she had a very severe attack of sacral pain, and the left hypogastric region became very tender. I was asked to see her, and found a considerable hard swelling on the left and posterior side of the brim of the pelvis, fixing the uterus, and displacing it a little forwards and to the right side. The swelling had very little thickness, measuring from above downwards. It was diagnosed as a pelvic peritonitis, in which effusion of pus would probably soon take place. She menstruated in the middle of May, the flow lasting for three days. Thereafter a purulent discharge began, which lasted for about fourteen days. On 24th May considerable increase of thickness of the tumour was discovered, and it was easily felt by the hand applied externally. It was punctured by a trocar and canula, and only a little discharge came away through the latter; but very soon after its removal, a gush of brown bloody fluid was passed. On the following day the tumour could not be felt by the hand applied externally, and the patient expressed herself as very greatly relieved. The bloody discharge ceased after two days. After four days it again recommenced. But in spite of this fetid bloody discharge coming away not scantily, the symptoms gradually became again aggravated, and the tumour again increased in bulk. On 14th June I again inserted Pouteau's trocar and canula into the tumour, and drew off eight ounces of fetid bloody fluid, closely resembling the discharge. Some fetid gas also escaped through the canula. After this operation the grumous bloody discharge lasted for only four days. The woman now expressed herself as quite recovered, began to go about the ward, and was dismissed cured in the middle of July. An examination per vaginam, made before her departure, revealed the existence only of a little induration in the site of the former tumour.

CASE VI.—Mrs M., æt. 33, sterile, has always menstruated regularly and profusely. On 2d May 1862 the monthly period began as usual, but, while she was engaged at a washing on the next day, the discharge ceased. In the evening of this day she felt ill, and had much pain in the belly, especially in the left side, which was swollen. The pain grew worse and worse, till she came to the hospital on 27th May.

On admission, the belly is distended, and there is tenderness on pressure in the lower part of the left side, but nothing abnormal can be felt. Her bowels are constipated, but she has no dysuria. Examination per vaginam reveals the uterus fixed in its natural position by a hard tender swelling high in the pelvis, and lying between the womb and rectum, and on the left of the mesial line. Laxative medicines were prescribed. On 3d June she passed a quantity of blood per rectum, on two occasions. It was at first red, and afterwards brownish. On two or three subsequent days only small quantities of the same were observed in the evacuations. On the 7th June she began to menstruate profusely, and had much uterine pain. The flow lasted for six days. After it ceased, she suffered no further pain; and examination per vaginam made out only a thickening and induration of the tissues in the former site of the bloody tumour, and restored mobility of the uterus.

The remark of Dr West, that most examples of uterine hæmato-

cele are connected with some derangement of menstruation, is amply confirmed by the histories of the preceding cases. The most cursory perusal of these reports also shows that the disease may be described as sudden in its supervention, that it produces great agony and often cramplike pain in the stomach, bearing-down pain, and irritation of the bladder; that there is great tenderness in the seat of the effusion, and that the belly generally becomes more or less distended with flatulence. Besides these symptoms, vomiting, generally of bilious character, and constipation are frequent occurrences. In case second, diarrhœa was present. It is natural to expect, as is always observed, that an anæmic condition should be produced when the extravasated blood is large in amount; but besides anæmia, and more or less severe feverish excitement, there is generally no farther peculiar constitutional disturbance.

The disease may be mistaken for ovarian dropsy, fibrous tumour, pelvic inflammatory induration or abscess, pelvic peritonitis, uterine and extra-uterine pregnancy, and retroversion of the gravid uterus. I shall not enter into the details of its diagnosis from these various diseases. Most of them will suggest themselves to any person ordinarily intelligent in the diseases of women. I may, however, remark, that the history, if well made out, offers great assistance in this matter. But even when the history is pretty distinct, it will be often impossible, particularly when the tumour is small, to make a satisfactory diagnosis from pelvic inflammatory induration or abscess, from pelvic peritonitis, and from extra-uterine pregnancy; and fortunately the diagnosis from these diseases is not of very great importance, so far as the practice to be employed is concerned. I would particularly remark that elongation of the uterus is given by Dr West as a diagnostic indication of extra-uterine pregnancy, and that this statement appears to me to require to be carefully guarded. No doubt, in extra-uterine pregnancy the uterine cavity will be elongated; but, on the other hand, in the cases recorded above, the uterus was found greatly elongated in every instance where the hæmatocele was large, and in all it contracted with the contraction of the blood sac. In all, this elongation co-existed with a cervix uteri, having none of the conditions of the cervix in pregnancy. In all, a careful examination of the case led to the belief that no form of pregnancy existed; and although in some there was room for suspicion of the existence of pregnancy, in others there was none.

The general treatment of the various distressing symptoms of this disease requires no special remark in this place. I shall only consider briefly the surgical treatment of the tumour. On this subject there is a great divergence of opinions, some believing that it is best, in all cases, to abstain from interfering with the hæmatocele; others advising its being incised or punctured, with a view to its evacuation, at least in some cases. In the sixth case recorded here, the tumour was spontaneously evacuated per rectum, and the

occasional occurrence of this termination renders it quite unnecessary in such cases to resort to any surgical interference. In other cases, as in the second here given, the bloody effusion is rapidly absorbed, and the surgeon is happy not to have his skill in operating put to the test. In other cases, as in the second of those here reported, the surgeon may, even if he wished to operate, find no safe access to the tumour: he may find both the vaginal and abdominal aspects of the tumour presenting characters which lead him to estimate highly the danger of operating, and to judge it more prudent to use what is called an expectant treatment. On the vaginal aspect the tumour may be too high, or present too little resistance to the examining finger. On the abdominal aspect he may, in tumours supposed to be extraperitoneal, fear lest he perforate the peritoneum if the tumour is not very large.

But, after all these considerations, I feel sure that it is often good practice to open the sac, and that, in many cases, it is the only good practice. In four of the cases recorded above I have every reason to congratulate myself on the interference resorted to. In all four it gave almost immediate, partial, and gradually increasing relief to the sufferers. In the first case there appeared every reason to expect bursting of the sac and diffusion of the fluid over the whole peritoneum, an accident which has often occurred, and which the opening of the sac tended to avert. In the third and fourth cases the tumour would, judging from the condition of the syruplike blood in the rectovaginal swellings, almost certainly have soon burst spontaneously into the vagina or rectum; and in these cases the operation certainly shortened the patients' sufferings, husbanded their strength, and contributed to their early recovery, and to their safety from the danger of death. In the fifth case the severity of the symptoms and the great slowness of the progress of the case seemed to me urgently to demand the use of any means likely to assuage suffering and remove the disease. And it must be remembered that a case such as the fifth may last for an indefinite length of time. In the case from London, to which, in a former part of this paper I have already referred, the disease had continued for more than a year, and there were no signs whatever of these large tumours offering to point in any direction.

The fifth case affords a good illustration of the necessity of a free opening in some cases. In it the tumour was increasing, while it was at the same time discharging. It was not only increasing in bulk, but fetid noxious gas was being evolved within it by decomposition of its contents. In this disease, as in pelvic abscess, the existence of an opening in the sac, and the passage of discharge constantly, afford no absolute security against the increase of the tumour, or against its bursting in a new direction. A free opening for discharge may certainly prevent increase of the size of the tumour, but its freeness will not prevent the contents of the sac

penetrating even in more than one new direction, a circumstance of which clinical observation has convinced me.

The first case affords an example of opening the tumour by the ordinary paracentesis abdominis. In it and in case second, this mode of access to the sac was easier and more direct than that per vaginam. In the retro-uterine cases the tumour was opened per vaginam, and in all such cases no other method of operating should be resorted to. A trocar or a guarded bistoury may be used, the operator being careful to wound only in the mesial line, and to avoid injuring any vessel he may feel pulsating. It has been recommended in cases of this description to pass the finger through the artificial opening, in order to break down clots and imaginary dissepiments; but such a proceeding is not possible, and were it possible it would not be advisable. In cases that are not retro-uterine, and on which operation per vaginam is decided upon, the surgeon should choose for incision or puncture the most prominent part, always taking care to avoid any vessel that can be felt, and not to injure the bladder or rectum.

Rapid absorption of the effused blood (as happened in case second) is undoubtedly the most desirable termination of a hæmatocele. But it does not often occur when the extravasation is large, and I cannot assign any reason why the histories of hæmatoceles should in this respect be so widely different. Only it appears to me that the difference probably depends greatly on the condition of the extravasated blood. If it becomes dissolved and syruplike, I believe it becomes always mixed with pus, and is almost sure to be discharged and not absorbed. If it remains in the form of clot, it may be absorbed. In case second this persistence in the coagulated condition was rendered probable by the entire absence of fluctuation during its gradual diminution in bulk. The change into the tarry or syrupy condition is probably greatly dependent on the presence of inflammation of the sac, and secretion of pus. Mere bulk is not a sign of necessity for spontaneous or artificial evacuation, as the history of case second shows. But there can be little doubt that in large hæmatoceles absorption is less likely to occur than in smaller tumours. If these remarks have a good foundation, then, in cases where fluctuation can be anywhere felt, or where the dissolution of even a part of the effused blood has taken place, the question, whether evacuation of the contents of the sac will take place or not, has not to be decided: it will assuredly occur, and the surgeon has only to determine whether he will leave the case to nature or interfere, to hasten or direct the progress of the disease.

ARTICLE III.—*Report of some of the Cases in the Clinical Surgical Wards of the Royal Infirmary of Edinburgh, during August and September 1862.* By THOMAS ANNANDALE, M.R.C.S. (Eng.)

Radical Cure for Reducible Inguinal Hernia in a Child four years old.

CASE 51.—J. P., æt. 4, admitted 14th July 1862, for a reducible inguinal hernia on the right side.

On admission, there was a large inguinal hernia, the size of a closed fist, which descended into the right scrotum, and could be easily reduced.

17th.—To-day, Mr Syme performed his operation for the radical cure of hernia.¹

24th.—The plug was removed, and pads of lint carefully applied.

21st August.—The pads have been changed at intervals since last date. The patient was allowed to get out of bed to-day and walk about the wards. The skin remains invaginated, and the hernia shows no tendency to descend.

2d September.—Dismissed cured. Was ordered to wear a truss for some time.

1st October.—The child was brought back to show himself. The parts are perfectly right, and the patient is able to run about again as usual.

Remarks.—I am not aware that the radical cure for reducible hernia has been performed before on a subject so young. The size of the hernia and the width of the inguinal canal were such that no control was exercised by the application of a truss; and although considerable irritation followed the operation, it was limited to the integuments over the inguinal canal and skin of the scrotum, and this was necessary for the success of the operation.

Amputation of the Thigh, with Compression of the Abdominal Aorta.

CASE 52.—J. B., æt. 51, admitted 8th August 1862, for a compound comminuted fracture of the left thigh, caused by some heavy-laden waggon passing over it. Mr Syme performed amputation through the upper third of the thigh, compression being made on the abdominal aorta by means of a screw clamp.

6th.—The patient sank, and died this morning.

Remarks.—This case is mentioned in order to call attention to a method of restraining hæmorrhage, by pressure on the abdominal aorta, in operations on the lower part of the body. This method of restraining hæmorrhage, which has lately been revived, was adopted in the present instance with complete success, the instrument employed being a modification planned by Professor Lister of Glasgow. It was first used by Mr Syme in his late operation on an iliac aneurism, and shortly after by Mr Spence, senior

¹ For a description of this operation, see Mr Syme's "Observations," page 176.

surgeon to the Royal Infirmary, in a case of amputation at the hip-joint. On all these occasions, the application of this instrument has completely prevented the slightest flow of blood; and it is to be hoped that its employment will tend to decrease very much the mortality of operations on the lower extremities, near the trunk, which hitherto, as is well known, has been very great.

Recurrent Fibrous Tumour.

CASE 53.—J. L., æt. 57, admitted 24th July 1862. Thirteen years ago, the patient had a small tumour removed from his side. The wound healed rapidly, and the patient remained quite well until seven months ago, when he noticed another tumour, the size of a pigeon's egg, in the same situation.

On admission, the tumour lay midway between the last rib and the crest of the ilium.

24th.—The tumour was cut out. On examining it microscopically, it was found to consist of numerous oval-shaped cells, filled with nuclei.

26th.—The wound has healed by the first intention in the greater part of its course, and he was dismissed at his own desire.

Remarks.—It is not often that the recurrent fibrous tumour is so long of returning after its first removal. In my notes of these cases, I find the history of a woman who was in these wards a few years ago, and had a small tumour of this kind removed from her forearm. She returned twice, at intervals of a few months, to have the disease again cut out, a tumour of the same nature having recurred in the cicatrices of the former operations.

Having heard nothing of this patient for eighteen months, it is probable that up to this time the disease has not returned, as she lives in the neighbourhood, and promised to let us know if it grew again.

Excision of the Head of the Humerus, together with the Glenoid Cavity of the Scapula.

CASE 54.—G. P., æt. 38, admitted 28th July 1862. In June last, the patient noticed a swelling in front of the shoulder, which soon after burst and discharged a quantity of matter. Two other openings afterwards required to be made, to give exit to collections of pus.

On admission, there were two sinuses in front of the axilla, and a third on the anterior surface of the deltoid muscle; all of these were discharging freely.

15th August.—To-day, Mr Syme proceeded to excise the shoulder-joint by means of the usual incision in front of the joint. Having cut off the head of the humerus, he found that the glenoid cavity was also diseased, and, in order to get free access to this bone, made an incision at the posterior aspect of the joint, along the

inferior margin of the scapula, and united it with the anterior one ; by this means the whole of the disease was removed.

27th.—Patient's health already much improved. The posterior wound is nearly healed.

28th September.—Both wounds entirely healed. Dismissed cured.

Remarks.—In many cases of excision of the shoulder-joint, it is only necessary to remove the head, and a greater or less amount of the neck of the humerus, according to the extent of the disease. The best incision for this purpose is one made longitudinally from the coracoid process, along the anterior margin of the deltoid muscle. By this wound the head of the humerus is freely exposed, the muscles attached to it readily divided, and the head of the bone turned out and sawn off. I saw in private lately a fibro-cartilaginous tumour, the size of a closed fist, which grew from the head of the humerus, removed, together with the bone, in this way, by Mr Syme, with the greatest facility. But in other cases of excision of the shoulder-joint, it is necessary to remove also the articular surface of the glenoid cavity, when it is affected by the disease, as in the case related. Mr Syme having found it difficult to remove the glenoid cavity by means of the anterior incision, adopted, in the present instance, a new method. The posterior incision made the operation comparatively simple, and also gave free vent to the discharge, facilitating the healing process.

Tumours of the Upper Jaw.

CASE 55.—A. G., æt. 49, admitted 25th August 1862. Eleven months ago, the patient noticed a small tumour growing from the bone, immediately under and to the outer side of the right eye. She applied to a surgeon, who touched it with caustic, but without giving her any relief. For the last few months it has been rapidly increasing in size.

On admission, there was a firm swelling, which sprung from the outer and anterior aspects of the malar bone, and extended backwards to the zygoma; the eye was not displaced. It was not thought advisable to attempt the removal of the disease, as it appeared to extend to the base of the skull.

CASE 56.—G. B., æt. 52, admitted 18th September 1862. Six months ago, the patient observed a slight swelling under the right eye; she had also a feeling as if the corresponding eyeball was compressed; leeches, blisters, and fomentations were used without benefit. The tumour has been steadily enlarging ever since its commencement.

On admission, the whole of the right upper jaw was found to be occupied by a tumour of firm consistence; it was the size of a goose egg, and its principal projection was in the cheek, there being no prominence in the palate; the right nostril was quite obstructed,

but the nose was not altered in shape; the eyeball was displaced slightly upwards and inwards.

20th.—The whole of the right superior maxilla was removed together with the tumour. On examining the tumour removed, it was found to have entirely absorbed the facial bones of that side, with the exception of a portion of the hard palate and malar bone.

3d October.—The wound is now firmly healed, and the patient is quite comfortable.

Stricture at the Orifice of the Urethra.

CASE 57.—H. C., æt. 21, admitted 4th September 1862. When the patient was eight years old, a stone fell upon him and injured his yard, since then he has always had difficulty in making his water. His difficulty has increased very much during the last six months.

On admission, the orifice of the urethra was very much contracted, and a No. 5 bougie could with difficulty be introduced. The stricture also affected the portion of the canal which ran through the glans penis; behind this the urethra was healthy.

September 30.—Bougies have been passed at intervals, and the stricture gradually dilated. The patient now makes his water much more freely.

Remarks.—Although a stricture at the orifice of the urethra may be the result of an injury, or even owing to the contraction of a syphilitic ulcer, yet this disease is occasionally congenital. I saw a gentleman lately who had a stricture affecting the orifice and about half an inch of the commencement of the urethra, which had existed since birth. In a child, one day old, which I was asked to see a few weeks ago, for imperforate urethra, I found, after cutting down upon the situation of the orifice, and opening into the canal, that there was a tight stricture, which extended for a quarter of an inch through the glans, and which only admitted one of Beaumont's canalicular probes: this I slit up, and introduced instruments occasionally with a favourable result. There is also in my possession a preparation taken from an adult negro, in which there is a very tight stricture immediately at the orifice of the urethra.

Guinea Worm in the Skin of the Leg.

CASE 58.—U. R., æt. 28, admitted 1st July 1862. Patient has been in India for four years, and in May last, shortly after his return, he noticed a small pimple on the anterior surface of the leg immediately below the knee. Three days after, the swelling burst, and a small piece of the worm came out; he then poulticed it, and several small pieces of the worm have continued to be discharged from time to time.

On admission, there was a small swelling at the upper part of the leg, surrounded by slight inflammation of the skin. No worm could be detected. He was ordered to apply poultices.

24th.—There has been no appearance of any portions of worm, and the wound is now rapidly healing. The patient was dismissed, as it was evident that the worm had all been discharged.

The following case was in these wards two years ago:—

CASE 59.—L. M., æt. 39, admitted 22d September 1860. The patient was a soldier in the East Indian campaigns, and had both feet affected with this disease.

On admission, there was six inches of the worm protruding from a sore on one foot. This was removed, and other portions, a few inches in length, continued to come out under the application of poultices.

At the end of a month, all the worm was discharged, and the wound healed.

Remarks.—From the history of these cases it does not appear that it is of so much consequence as has been generally supposed that this worm should be taken out entire. It may be that there is not the same tendency for the worm to be reproduced in this country, for in both cases mentioned the worm was discharged in small portions, and without any bad result.

Rupture of the Urethra.

CASE 60.—F. R., æt. 17, admitted 1st August 1862. About an hour before admission, the patient fell across a large tub, on his perineum. He immediately felt great pain in that situation, and, on attempting to make water, passed a considerable quantity of blood.

On admission, the perineum was slightly swelled; a No. 6 catheter was introduced into the bladder, and eight ounces of bloody urine drawn off.

2d.—A catheter again introduced and tied in.

4th.—To-day the catheter was removed.

5th.—Has passed his water freely by the urethra, but some blood still comes with the urine.

16th.—A No. 8 bougie passed, and the patient dismissed at his own desire.

4th September.—Returned to-day to have a bougie passed. He remains quite well, and is able to make water without difficulty.



ARTICLE IV.—*On Cellular Pathology. Case of Syphilitic Deposit in the Substance of the Heart.* By D. RUTHERFORD HALDANE, M.D., Physician, late Pathologist to the Royal Infirmary

IN a paper in the last number of this Journal, on the coexistence of tubercle and cancer, I alluded to the two opinions entertained by pathologists regarding the origin of new growths, and I expressed my belief in the essential truth of the doctrine which maintains that cells do not arise independently, but that all are produced from

similar pre-existing structures. While numerous observations confirmatory of this view have been published in Germany, the subject has not in this country met with the attention it deserved, and as the question is one which can only be decided by observation, I propose at present to detail the particulars of a case in which, as it appears to me, the strongest testimony is borne to the correctness of the modern or cellular pathology. I must, however, premise a few observations on the general question.

The observations of Schleiden and Schwann were unquestionably among the most important of modern times. They established the truth of what is called the cell-theory, which maintains that the vegetable and animal tissues are formed from cells, originally simple, but which in process of development undergo various modifications. This doctrine was soon applied to pathology, and it was supposed that a new growth, such as pus, arose in the following way:—A fluid containing in solution animal and mineral matter is poured out from the blood-vessels; in this fluid, at first structureless, molecules and granules make their appearance, these become grouped together and surrounded by a membrane so as to form a nucleus, around which the cell itself is formed. This doctrine, though plausible, has been almost universally abandoned in Germany; the description of what is supposed to take place is essentially theoretical; positive facts cannot be advanced in its favour; and the appearances adduced in support of it admit of another interpretation.

Twenty years ago, Professor Goodsir described the development of new cells from what he denominated “centres of nutrition;” each centre of nutrition was described as a cell, from the nucleus of which successive broods of young cells proceeded and passed off in various directions, and under various forms, according to the texture or organ of which their parent formed a part.¹ Virchow, however, first clearly announced the doctrine of continuous development in its full integrity as applied to new formations. The almost simultaneous discovery by himself and Donders of the existence of connective tissue corpuscles, was the first important step in this direction. The close analogy existing between these, and the corpuscles of bones and the cells of cartilage, was speedily discovered. These cells, and their anastomosing branches, were soon recognised as the channels by which parts not in direct communication with capillaries are nourished. Their arrangement is perhaps most typical in the case of bone. The osseous structure, around each of the Haversian canals, is studded with bone-corpuscles or lacunæ, from which fine pores or canaliculi proceed, which freely anastomose, and by which adjoining lacunæ communicate with their neighbours. These canaliculi extend to the surface of the vascular canal, and there can be little doubt that they take up nutritive fluids from the blood, and distribute it by means of their mutual anastomoses throughout the whole of the bone-substance. The existence of similar channels

¹ Goodsir's Anatomical and Pathological Observations, “Centres of Nutrition.”

in tendinous structures was demonstrated by Wittich,¹ and has been established in the case of almost all the tissues of the body.

Virchow had from the first recognised the importance of these anastomosing cells, or connective tissue corpuscles; he saw in them the starting point of various new formations; and he soon enunciated the doctrine that no development of any kind begins *de novo*, that where a cell arises, there a cell must have previously existed (*omnis cellula e cellula*), just as an animal can spring only from an animal, a plant only from a plant.² Of course this doctrine, which revolutionized the older pathological theories, did not meet with universal acceptance; by many of those who had identified themselves with the earlier views, it was regarded as no more than a baseless though brilliant theory. Later observations have, however, all tended to show that it is essentially correct, and the admirable observations of Weber, His, Rindfleisch, and others, have convinced many of its original opponents of its correctness.

The most important objection made to this theory is, that new cellular growths arise in situations where no cells previously existed. Thus Professor Bennett says, "the fallacy of this theory, though it has many facts which seem to give it support, is easily demonstrated. For instance, pus cells may occur in tissues where there are no epithelial cells, as among muscles; and cancer, pus, and tubercle are all found in the white substance of the brain, where no cells have been demonstrated to exist, capable of increasing on the one hand or degenerating on the other."³

Such objections are founded on a misconception or imperfect acquaintance with Virchow's views. Virchow does not maintain that pus cells are always developed from *epithelial* cells, but that they always arise from *cells*; and that in the case of the non-epithelial structures, they take their origin from the connective tissue corpuscles of the part. No epithelial or glandular cells are found in muscles, or in the white substance of the brain; but in the former we find nuclei within the fibres, and corpuscles of interstitial connective tissue between the fasciculi; while in the latter, the existence of a form of connective tissue which binds together the nervous elements has been demonstrated.

It is not, however, to be supposed that the demonstration of these connective tissue corpuscles is at all times easy, or that the appearances met with never admit of misinterpretation. With certain precautions, however, we may generally satisfy ourselves of the presence of this cellular element even in the fibrous structures. The mode of demonstration which I have found most convenient, is the following: the tendo Achillis of a child, or one of the semi-lunar cartilages of the knee-joint, is to be cut in pieces and soaked in diluted acetic acid (one part of pyroligneous acid to seven of

¹ Virchow's Archivs, 1855.

² Cellular Pathology, p. 27.

³ Principles and Practice of Medicine, 3d edit., p. 153.

water), until it swells up and becomes translucent. The pieces are then to be dried in the air: in this process they shrink considerably, and assume a horny appearance. When it is desired to examine the structure, the surface is to be moistened with water, and slices are to be removed with a razor or a very sharp knife. In this way specimens of any degree of thinness may be obtained, and these are to be examined under the microscope (a drop of water, or still better of glycerine, having been previously added), when the anastomosing cells will in general be distinctly seen. The only source of fallacy with which I am acquainted is this, that it is sometimes exceedingly difficult to distinguish the branches of cells from fibres of elastic tissue. This source of fallacy is not surprising, and becomes of little consequence when it is borne in mind that Donders has proved that elastic tissue is formed by a conversion of the cells and tubules of connective tissue into compact and tough fibres, which retain the original plan of the tissue, and are arranged in the form of a net-work; it is indeed impossible to say whether the cavity of the original cell is completely obliterated, or whether a small canal is left in its interior.

It is, however, in pathological processes that we have the most convincing proofs of the truth of the doctrine of continuous development, and that we can actually trace the changes in process of taking place. The tissues may be divided into two groups; those which consist exclusively of cells, and those in which the individual cells are separated from one another by an intervening material.¹ The first group embraces the epithelial, the second the connective tissues. Now, pathological processes differ considerably, according as the former or the latter of these is affected. The phenomena of suppuration, for instance, are different according as it starts from epithelial cells or from connective tissue corpuscles; for in the first case there is not necessarily any great loss of substance, while in the second this invariably takes place. In either case, however, the process is essentially the same; the nuclei, originally single, divide and increase in number, new cells are formed, and so the process of multiplication goes on. We must not indeed expect to be able, in the case of every abscess or purulent discharge, to be able to trace thus distinctly the origin of the pus-cells; there is only a certain stage in pathological as in physiological growths, in which the actual mode of development can be followed; we might as well expect to be able to discover, by an examination of the mature foetus, the different steps by which its organs had been formed, as to be able, in a ripe abscess or a well-organized cancerous mass, to determine in what way normal had been converted into abnormal tissues.

Two years ago, I had several admirable opportunities of witnessing the mode of formation of pus upon mucous surfaces. During the winter 1860-61, several fatal cases of small-pox occurred in

¹ Virchow's Cellular Pathology, p. 28.

the Royal Infirmary, and in almost all, the lining membrane of the larynx and trachea was found coated with a very soft, dirty-looking deposit. This, on microscopic examination, was found to consist essentially of pus corpuscles; but, on gently scraping the surface of the membrane, a remarkable change was found to have taken place in many of the cells of its epithelial lining. The cells in this situation are of the cylindrical variety, and in the normal condition each contains a single nucleus. But in the cases to which I am alluding many of the cells were enlarged, and, in place of a single nucleus, each contained several nuclei, three, four, or more. These it was evident had been derived from the division or proliferation of the original nucleus; while external to the cells were young ones in all stages of development, some of which corresponded perfectly to those still retained within the parent one.

Within the last few months I have had two opportunities of tracing the origin of other morbid growths in the case of non-epithelial tissues. To the first of these I shall allude in a very cursory manner. On the 19th of May, I examined the body of a man who had died of cancer. The disease had had its starting points from the dorsal vertebræ, the scapula, and the sternum; it had spread very rapidly, and had formed large tumours anteriorly and posteriorly. The growth had increased by a gradual involvement of surrounding parts: the appearance of the muscles was remarkable; near the bones from which the disease had had its origin, and in the centre of the tumours, none of the normal tissues could be distinguished; but in the outskirts of the growths the gradual involvement of the normal structures could be traced; one portion of a muscle, for instance, was lost in the mass; in the adjoining portion the fibres could be recognised, but pale and of altered appearance; while external to this the muscular structure retained its healthy appearance.

On microscopic examination, the mass of the tumour was found to consist of an immense number of small cells, apparently naked nuclei; while within the muscular fibres adjoining the diseased growth, similar cells could be seen, evidently formed by a division or proliferation of the original nuclei. The growth then evidently extended by means of an abundant production of cells from the nuclei of the muscular fibres, and from the connective tissue corpuscles interposed between them, the muscular fibre itself gradually wasting and disappearing. In this case it would have been impossible to tell, from a mere examination of the muscular fibre, what the cells contained within it were ultimately to become; for in the early stage of such formations we cannot say whether we have merely to do with a multiplication of natural textures as the result of irritation, or with the development of a heteroplastic or so-called malignant growth. The concomitant circumstances in this case, however, left no doubt that the latter condition was in progress.

The following case of a somewhat different character is of great

interest for its own sake, and also as an illustration of some of the preceding statements.

On the 13th of last June, in conjunction with Dr Littlejohn, I examined, by direction of the authorities of police, the body of a woman who had died under somewhat suspicious circumstances. We were informed that between ten and eleven o'clock on the night of the 11th of June, a woman had rushed out of a brothel in the High Street, exclaiming that her sister had been murdered. The police immediately entered the house, and found a woman lying in the passage apparently lifeless; the body was at once conveyed to the Royal Infirmary, where it was found by Dr Simpson, resident clinical assistant, that life was extinct. Subsequently to the examination of the body, I obtained a few additional particulars, which, with a view to perspicuity, I may introduce here.

M. H., about twenty-five years of age, the daughter of respectable working people, began to lead a dissipated life about eight years before her death, and had for the last three years been an inmate of a brothel in the High Street. She habitually drank freely, and was frequently intoxicated. Her health had for a long time been good, in fact robust, but latterly she had become very fat, and had for some time back occasionally complained of difficulty of breathing. I made special inquiries as to whether she had been known to have had any syphilitic affection, but could obtain no satisfactory information. The woman, in whose house she had been residing, stated positively that she had had no such complaint for the last three years, but I could trace the history no farther back.

About nine o'clock in the evening of the 11th of June, her "fancy man" came to see M. H. She told him she was hungry, and went with her companion to a public-house, where she ate sandwiches, and drank some ginger-beer, with about a wine-glassful of whisky. They returned to the house, and were together in a bed-room for about an hour. She then left the room in order to empty the chamber utensil; this she appears to have done, and was next seen by one of the inmates of the house sitting in the passage in a crouching attitude. The latter addressed M. H., but received no answer; supposing she was asleep or intoxicated, she gave her a slight push, whereupon the body fell down and remained motionless. The sister of the subject of this observation, herself an inmate of the establishment, was immediately summoned, and finding her sister apparently dead, she rushed into the street shrieking out that her sister had been murdered.

The body was examined in the Pathological Theatre of the Royal Infirmary, on the 13th of June, in the presence of Professor Laycock and the members of the clinical class. The following were the appearances found:—

There was great lividity of the face and neck; no mark of injury on the surface. The mammae were much developed; there was a large deposit of adipose matter in the cellular tissue of the thoracic and abdominal parietes; in the latter situation there was a layer of fat more than two inches in thickness. There was not a corresponding deposit of fat upon the limbs.

On examining the head, the dura mater was found firmly united to the skull; in the occipital region these adhesions were so firm that the membrane gave way in the attempt to separate them. There was no appearance of any abnormal deposit in this situation, or at any other part of the membranes of the brain. There was a moderate degree of congestion of the pia mater and of the cerebral substance, but nothing abnormal was discovered.

The mucous membrane of the larynx and trachea was congested, and lined with frothy mucus.

The right lung was non-adherent; the left pleura was universally and firmly adherent. Both lungs were much congested, in some places to such a degree as to have led to a very slight degree of hæmorrhagic extravasation.

The heart was moderately distended with fluid and loosely coagulated blood, divided pretty equally between the two sides; there was rather more fat around it than is generally found at the age of five-and-twenty; it weighed 11½ ounces.

The valves were tested and found competent. On the anterior surface of the left ventricle, near the septum, a flattened mass was noticed, about a quarter of an inch long and half that breadth, projecting slightly above the general level; it was cut into and found to be of a moderately firm consistence, and a pinkish grey colour, and to extend one-eighth of an inch into the muscular substance. On laying open the left ventricle, the greater part of the septum presented, instead of the ordinary smooth fleshy appearance, a greyish or yellowish pink colour, as if portions of the muscular substance had been converted into fat, which shone through the endocardium. The surface of the septum had not a quite uniform tint, but had a somewhat mottled appearance, as if the new matter had been deposited in separate masses, with slight intervals between them. The surface of the septum looking to the right ventricle had a similar appearance, except that the deposit was in the form of distinct lobules, generally about the size of peas. When the septum was cut through, the deposit was found to extend through its entire thickness; it had a considerable resemblance to fat, but was of a pinker colour, and tougher consistence; a small quantity of a watery juice exuded from it on pressure; intermixed with it, chiefly near the endocardium, was a material which, to the naked eye, resembled fibrous tissue, being tough and of a bluish or greyish colour. The wall of a portion of the left ventricle, extending from the base half way to the apex, and situated near the septum, was in a precisely similar condition; some of the pectinate muscles appeared to be completely converted into this material. On the right side the deposit was confined to the septum, with the exception of a single nodule, which was continuous with the material in that situation. The substance of the auricles was natural. There were very minute traces of atheroma in the ascending aorta, and on the anterior flap of the mitral valve.

The stomach was distended with flatus; it contained a few ounces of pulsatious matter of a pinkish colour, in which could be distinguished morsels of meat, apparently of salt beef, and little bits of bread. The contents of the stomach had a sour smell, but no distinctly alcoholic odour. There was no abnormal condition of the gastric mucous membrane. The whole of the intestinal canal was examined and found healthy. The liver weighed four pounds; it was moderately congested, and the hepatic cells contained a little more fat than natural. The kidneys and spleen were healthy. There was matting together of the parts in and around the broad ligaments. The uterus was a little enlarged. The os uteri was small and regular; a little muco-purulent discharge issued from it. There were no indications of syphilitic disease about either the external or the internal genital organs.

Microscopical Examination.—The deposit in the septum of the ventricles was first examined by scraping off a little of it, and mixing it with water, when it was found to consist of an immense number of small cells mixed up with granular matter, and a finely fibrous or fibrillated material. The cells were a little larger than blood globules, being from $\frac{3}{80}$ to $\frac{1}{40}$ of an inch ($\frac{1}{16}$ to $\frac{1}{80}$ millimètre) in diameter, and contained minute granules in their interior. On the addition of diluted acetic acid they became more distinct and sharply defined, and presented a strong resemblance to the spores of some fungus, or other vegetable growth. They were, however, at once dissolved by a solution of caustic potash. Mixed up with them were fragments of muscular fibres, smaller than natural, in some of which striæ were still visible, in others these were almost entirely gone, and were replaced by fine dots. There were no free fat cells. When a section was made with the double-bladed knife the central portion of the deposit presented the appearances above described, except that the portions of muscular fibre were somewhat better seen than before. The transition from this to the healthy-looking tissue could be distinctly traced. On the margin of the deposit the muscular fibres were clearly seen, although the striæ were less distinct than natural. Lying on, between, and within the muscular fibres were bodies similar to those above described. In the tissue in the immediate neighbourhood of the deposit, which to the eye seemed natural,

well-formed muscular fibres were seen, but they were at once distinguished by the large number of nuclei in their interior; instead of a single nucleus occurring at comparatively rare intervals, there could be seen groups of five or six in close contact; in other situations they were of larger size than natural, and evidently in process of splitting up. This splitting up took place sometimes transversely, at others and more seldom longitudinally; in one case four could be seen arranged linearly, apparently within one cell. These cells, though varying somewhat, possessed the same general characters; they were larger than those seen in the centre of the deposit, varying from the $\frac{1}{2500}$ to the $\frac{1}{1800}$ of an inch (from $\frac{1}{100}$ to $\frac{1}{75}$ of a millimetre) in diameter, were of a rounded or oval form, and generally contained one or two granules in their interior.

The annexed engravings give representations of the changes which had taken place in the muscular fibres adjoining and involved in the new material.¹

Fig. 1.

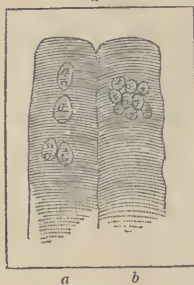


Fig. 2.

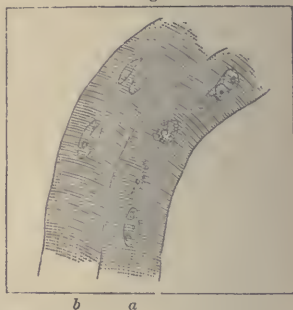


Fig. 3.

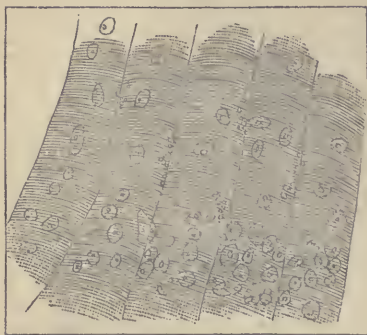


Fig. 4.



¹ Figs. 1-4.—Sections of the left ventricle in the neighbourhood of the new material, magnified 400 diameters.

Fig. 1.—Muscular fibres from an apparently healthy part at the margin of the deposit, showing increased growth of nuclei.

a. Nuclei enlarged, division about to take place.

b. Proliferation of nuclei.

Fig. 2.—Muscular fibres from the same situation as the last.

At the upper part of a four cells are seen arranged linearly, apparently within the same cell-wall.

b. A nucleus in process of dividing longitudinally.

Fig. 3.—Muscular fibres from a part involved in the deposit.

Numerous cells upon, within, and between the muscular fibres.

Fig. 4.—From near the centre of the mass.

Fragments of muscular fibres seen.

Great pains were taken to determine whether the cells arose within or between the muscular fibres. At first the greater part seemed to be within them; but careful observation determined that this was not invariably or even generally the case,—many which at first sight appeared to be so, turning out to be in reality between adjoining primitive muscular fasciuli. In some situations, however, it was established with certainty that the cells were actually within the muscular fibres. I may add that I submitted the demonstrations from which the annexed drawings were taken to Dr W. T. Gairdner, Dr Sanders, and Mr Turner, who satisfied themselves of the correctness of the observation.

The preceding case bears strong testimony in favour of the view of the German pathologists. There was no possible source of fallacy: cells could be seen to arise either from a division or a multiplication of pre-existing cells. As stated above, it was by no means easy to determine whether they arose in general from the nuclei of the muscular fibres, or from the intermediate connective tissue corpuscles. In reference to this point, it may be remarked that two opinions are entertained regarding the nuclei of muscular fibre. The generally received opinion is, that they are the actual nuclei of the sarcolemma; the other, that they are the nuclei of anastomosing connective tissue corpuscles with extremely fine walls, which penetrate and surround the primitive muscular bundles.¹ Whether we adopt one or other view is of no great consequence; for on either hypothesis the further process of development must be the same.

The only point which remains to be considered is the nature of the new material found in the muscular substance of the heart. My first impression was, that it was of a syphilitic character. The absence of a similar deposit from any of the other situations where it is more commonly met with, and the comparatively high degree of its organization in the heart, subsequently raised doubts in my mind as to the justice of this impression; after mature consideration, however, I came to the conclusion that the original opinion was the correct one. To this conclusion I was led by a consideration of the characters of the growth, and by a reference to a few somewhat similar cases. Only three explanations of the character of the deposit appear to me possible: the first, that it was due to a simple inflammatory process; the second, that it was the result of a cancerous degeneration; the third, that it was the manifestation of a constitutional syphilitic affection.

The first of these hypotheses may be disposed of in a very few words. Myocarditis, more common than has often been supposed, leads either to abscess, or more frequently to fibroid degeneration of the muscular substance. In the case under consideration, a certain amount of fibroid degeneration had taken place, indicative, no doubt, of a certain degree of simple inflammation; the deposit, however, was of a different character. No one could have taken it for an abscess in course of formation; and it had none of the

¹ See Weber, in Virchow's Archives, vol. xv. p. 480.

characters of purulent matter altered by age. Microscopic examination, too, showed cells in process of growth, not of decay. For these reasons the idea of simple inflammation must be rejected. Neither can I believe the deposit to have been cancerous. It had, indeed, some of the physical characters of cancer, although there was an almost entire absence of the juice which can generally be expressed from growths of that kind. But, putting this aside, and even keeping out of view the extreme rarity of primary cancerous degeneration of muscular fibre, the other facts do not tally with this hypothesis. The great majority of the cells were not such as are seen in cancer; for, as previously stated, they were generally of small size, little larger than blood-globules, and presented a remarkable resemblance to the spores of some vegetable growth. It is very true that animal cells cannot in general be distinguished in an absolute manner from one another, for, with altered nutrition and altered activity, cells may adopt a new form, analogous to that of some other kind of cell. Still, the general characters of cells in the same tissue are the same; it may be impossible to recognise and differentiate a special cancer-cell, but there is no doubt but that cancer as a whole presents certain special histological characters. Consequently, although in the above case some cells were met with which presented a striking resemblance to cancer-cells, or the nuclei of cancer-cells, the general microscopical characters of the deposit were different, and suggested the idea of a growth less highly organized than cancer, and not proceeding so far in its development. It is also worthy of remark, that it is not usual to find in the centre of cancerous masses such distinct remains of the original textures as were met with here, where, in the very centre of the deposit, fragments of muscular fibre were still recognisable—a circumstance not to have been anticipated in the case of a neoplasm, which, like cancer, tends to absorb and assimilate to itself all the previously-existing structures.

By way of exclusion, therefore, I was led to believe that the deposit was of a syphilitic character; and arguments in favour of this view are not wanting. The later stages of syphilis are characterized by lesions, which are distinguished from the earlier venereal affections by their situation as well as by their anatomical peculiarities. Ricord and his school base the differences between the different stages of the disease almost exclusively upon the organs affected. The primary affection is purely local, and affects the part through which the contagion is contracted; in the secondary stage, the skin, the mucous membranes, the iris, and the other superficial tissues suffer; while, in the tertiary, the cellular tissue, the bones, the muscles, the liver, the brain, and other deep organs are affected. A division founded upon the anatomical characters of the lesions is, however, more satisfactory. Thus, in the primary and secondary affections, we have to do only with congestions, inflammations, and simple exudations (modified, no doubt, by the

specific virus), while in the tertiary there is a deposit of a peculiar material which takes the place of the atrophied natural textures. This deposit occurs in the form of gummy tumours or tubercles, and is met with frequently in the cellular tissue, in the testicles, in the bones, in the liver, and in the brain, occasionally, though unfrequently, in the muscles, and very rarely in the substance of the heart.

Virchow, in an admirable article "On the Nature of Constitutional Syphilitic Affections,"¹ describes a case of syphilitic deposit in the heart, and refers to two similar cases recorded respectively by Ricord and Lebert. These cases, though in some respects similar to that which I have described, present certain differences. In Ricord's case,² the subject of observation, a man, died suddenly, and, on examination, firm, yellow, cheesy masses were found in the substance of the ventricles of the heart. There was no doubt as to the fact of the individual having suffered from constitutional syphilis: there was a history of old chancres, and of ulcerated tubercles of the skin. In the case of a woman, recorded by Lebert,³ three tumours at a comparatively early stage of development were found in the wall of the right ventricle; here also there were syphilitic tubercles of the skin, of the subcutaneous cellular tissue, of the genital organs, and of the bones of the skull. In Virchow's own case, the patient, a man forty-seven years of age, had a history of a syphilitic affection dating back fourteen years. He died somewhat suddenly, and masses of deposit were found in the substance of his heart, chiefly in the septum; there was also syphilitic disease of the testicles.

The case which I have recorded is not so complete as these; it does not so distinctly carry along with it testimony as to the nature of the lesion. In the first place, there is no history of syphilis; but this, considering the circumstances under which the examination took place, is not surprising, and I attach no importance to it. A much more serious deficiency is the absence of any other evidence of a syphilitic affection: peculiar as this is, it does not lead me to modify the conclusion already expressed. The adhesions of the dura mater may indeed have been the result of a specific disease, but as this is not certain, little importance can be attached to their existence. The structure of the deposit in the heart was, however, so like what I have met with in undoubted syphilitic lesions in other organs, especially the brain, and it agrees so closely with that of the tumours described by Lebert and Virchow, that I have no doubt that the disease was due to a venereal affection, the history of which could not be recovered, and the other traces of which had been obliterated from the economy.

¹ *Archivs*, vol. xv. p. 217.

² *Clinique Iconographique*, pl. xxix.

³ *Anatomie Pathologique*, pl. lxxviii. fig. 5.

ARTICLE V.—*Case of Intra-Orbital Aneurism, cured by Ligature of the Common Carotid Artery.* By DAVID GREIG, M.D., F.R.C.S., Surgeon to the Royal Infirmary, Dundee.

JANE JONES, aged 47 years, a weaver, a thin emaciated woman, was admitted under my care into the Dundee Royal Infirmary, on the 28th April 1862, suffering from aneurism in the left orbit. She stated, that a fortnight before admission, while carrying a load of yarn upon her shoulder, she fell down a stair, and, in falling, struck the left side of her head against the framework of a loom. Her eye was not hurt, and she felt no pain in it at that time. She remained for a moment or two stunned, felt much confused and somewhat sick, lay in bed for the most part of that day, and although feeling "stounding" pains in the head and a singing noise in her left ear, she returned to her work next day. On the morning of Saturday the 26th April (two days before admission), she had to sit two hours in the open air waiting to get into the factory in which she worked, and although the morning was a warm one, she had a sharp shivering. This soon passed off, leaving a severe frontal headache. She worked for two hours however, when the headache getting worse and the shivering returning, she went home, took a warm drink, and went to bed. In the afternoon, she for the first time began to complain of her left eye; swelling of both eyelids commenced, with great pain in the orbit, impaired vision, and watering of the eye. She also complained of a singing noise in the left ear. Fomentations were applied, but gave little or no relief. Next day Dr Pirie saw her, and, suspecting an aneurism, requested me to visit her along with him. My first impression was that it was a case of acute abscess in the orbit; but when we again visited her next day, we both agreed that it was an aneurism, and, as there was deficient accommodation in her own house, she was removed to the Dundee Royal Infirmary, and placed under my care.

On admission, the left eyeball is much more prominent than the right and nearly covered by the lids, which are protruded, swollen, cedematous, and of a livid red colour. The conjunctiva is in a state of chemosis and overlaps the cornea. The vision of the eye is reduced to an obscure perception of light. Over both eyelids, all round the eyeballs, but more especially over the inner half of the upper eyelid, there is a strong pulsation, synchronous with the cardiac beats, and arrested by compression of the left common carotid artery. Pulse 80; no pyrexia. A small poultice was applied over the eye, and some opening medicine administered. She continued much in the same state during the next day (29th), but slept for a few hours.

30th March.—The swelling of the eyelids and the pulsation have increased, the eyeball is more prominent, and the power of distinguishing light from darkness gone. I now resolved to ligature the common carotid artery, and immediately proceeded to do so.

The patient having been placed under the influence of chloroform, an incision about an inch and a half in length was made over the course of the vessel, parallel with the inner margin of the sternomastoid muscle. The sheath of the vessel was soon exposed, with the descendens-noni nerve lying on it. The sheath was opened on the inner side of this nerve, the ligature passed (from without inwards) round the artery and tied, without any other nerve or vessel having been seen during the operation. The integuments were brought together by a silver suture. The pulsation in the swelling ceased immediately when the ligature was tied. On recovering from the chloroform she felt very sick, and repeatedly vomited during the course of the day. In the evening her pulse was 84, skin moist, and she felt better than she had done since the operation.

She was ordered a grain of opium and two ounces of port wine.

1st April.—Passed a quiet but sleepless night; swelling of eyelids decreasing; wound looking healthy. Bowels open.

3d.—Still improving; power to move the eyelids returning. No power to move the eye; no vision.

4th.—Pulse 100; vision to the extent of being able to distinguish light from darkness.

5th.—Swelling still subsiding, and eyelids now of a natural colour. No return of pulsation. The vision has so far returned that she is able to tell the number of fingers held up and the difference of colours. Pulse 96; sleeps well; bowels regular.

7th.—Vision much improved. Power of moving eyelids improving. Slight motion of eyeball upwards, inwards, and downwards, but not outwards. To have intermediate diet.

12th.—Symptoms all favourable; ligature firm; movements of eyeball improving, but still no power to turn the eye outwards.

23d.—Ligature removed to-day, being the twenty-fourth day after the operation.

24th.—To-day she was discharged from the Infirmary, cured. No return of the pulsation; no swelling; vision nearly as good as before illness. Can move the eye and eyelids well, with the exception of power to turn the eye outwards, which is still entirely gone, and which gives the eye a peculiar squint.

Since leaving the hospital the patient has frequently called on me, and I have been pleased to notice the gradual return of power to the external rectus muscle, until now (1st August), when I find the eye has quite recovered its natural appearance, and can be freely moved in all directions.

My object in publishing this case is to add one more to the list of recorded cases of intra-orbital aneurism,—these cases, as far as I am aware, being by no means common, and because I think it is interesting in many respects. The origin of the aneurism in this case can, I think, be clearly traced to the blow on the head which she received, although it is not very easy to see why one of the orbital arteries should suffer from this blow, nor why this should

not become evident until twelve days after the accident. The complete loss of vision, loss of motion, and state of the orbit otherwise, before the operation, and their complete recovery after it, is a very interesting feature in the case, and I trust may give encouragement to any medical brother who may have such a case under his care. With regard to the operation little need be said; although not common, it is very simple, and no provincial surgeon need be afraid to undertake it. Mr Syme records a case, in his "Observations in Clinical Surgery," of aneurism in the orbit, in which he tied the common carotid artery with complete success, and mentions his case as the only one of the kind which had occurred in Scotland. Similar cases have occurred in England and on the Continent, where ligature of the common carotid has, as a general rule, been successful in effecting a complete cure. Ligature of the common carotid artery is undoubtedly the proper treatment for cases of this kind, and when we think on the simplicity of the operation, it is with surprise we hear proposed instead, such means as electro-puncture, the injection of coagulating fluids, or compression of the artery.

Part Second.

REVIEWS.

Clinique Médicale de l'Hôtel-Dieu de Paris. Par A. TROUSSEAU, Professeur de Clinique Médicale de la Faculté de Médecine de Paris, etc. etc. Tomes 2, 8vo, pp. 841, 772. Paris: 1861-62.

[*Clinical Medicine at the Hôtel-Dieu, Paris.* By Professor TROUSSEAU.]

No French physician is better known at the present time in this country than the author of the two large volumes to whose contents we now desire to direct our readers' attention. The professional career of M. Trousseau has indeed been one of unusual brilliancy. A graduate of Paris in 1825, he was nominated in the following year—after the usual concours—Professeur Agrégé. In the spring of 1828, he received instructions, from the then Minister of the Interior, to study and report upon the endemic and epidemic diseases which prevailed in certain districts about the middle of France; and in October of the same year, he formed one of the medical commission, of which Louis was another member, despatched to Gibraltar for the purpose of carefully observing the yellow fever of that place. After a concours, in 1831, Trousseau was elected Physician to the Hospitals (Médecin des Hôpitaux). In 1837, he was successful in obtaining the grand prize of the Royal Academy

of Medicine for an essay on Laryngeal Phthisis. Defeated, in 1833, in the concours for the chair of Hygiene by M. Royer-Collard, in the following year he was triumphant over many worthy competitors for the professorship of Therapeutics and Materia Medica. It was during his occupation of this chair that the name of Trousseau has gradually become more and more familiar to the profession in this country. The publication of the excellent treatise on Therapeutics by Trousseau—a task in which he was aided by M. Pidoux—and his clinical instructions at the hospital for sick children (Enfants Malades), followed by numerous students and young practitioners, among whom there was always a goodly proportion of our countrymen, have done much to render his name distinguished. Lastly, an increasing and, of late years, very extensive private practice in the French capital, and, some time ago, his removal from the chair of Materia Medica to that of Clinical Medicine, have materially added to the eminence of Trousseau,—an eminence which may be said to culminate in the appearance of the remarkable volumes now before us. To one other fact in the history of Trousseau we must allude, for it is very significant. He, like M. Velpeau, was in early life the pupil of a most distinguished physician, whose accurate observation and descriptions of disease must, as he indeed willingly testifies, have contributed largely to his own improvement and knowledge. In pious and very touching language he dedicates to *this* physician, now no more, his volumes. *A Mon Vieux Maître, Pierre Bretonneau. Eternelle reconnaissance. A Trousseau.*

As English readers of these lectures of M. Trousseau, there are two particulars which strike us forcibly and most agreeably. First, there is very evidently on the part of the author a high appreciation of the labours and writings of our countrymen, and very specially those of the late distinguished physician of Dublin, Dr Graves, to whose Clinical Observations Trousseau makes repeated reference; and, secondly, the author's possession of a far more than average acquaintance with English medical literature is readily discerned. Not with English *medical* literature alone,—for M. Trousseau has assuredly a familiarity with our language, gained from newspapers and other sources, as well as medical journals and books. Of this we may offer one instance. In alluding to the fact that, in certain epidemics of scarlatina, the violence of the disease appears to be concentrated on particular limited localities, and that certain families peculiarly suffer, the author remarks, “Je rappellerai, à ce propos, le triste fait publié dernièrement, dans les journaux anglais, d’une Scarlatine enlevant, dans l’espace d’une semaine les six ou sept enfants d’un ecclésiastique de la ville d’York.”—Vol. i. p. 27. The sad experience here referred to occurred, as many of our readers will remember, in the family of the respected Bishop of London, then, however, Dean of Carlisle, not of York. If we compare the volumes of Trousseau with the published clinical observations or lectures of other physicians, they may be said to approach, with the

greatest degree of nearness both in aim and execution to the admirable work of Dr Graves, for which Trousseau himself has expressed the greatest regard. There is no attempt made in these volumes to offer an account or description of all the different forms of disease which fall under the cognizance of the physician, but certain affections—the author's clinical experience of which has always been extensive—are selected, and of these the nature, history, and treatment are most fully discussed. It is our object to make the present article analytical rather than critical,—to afford our readers, in short, as full a conception of the contents of the volumes as our space will permit,—and for this purpose we shall follow our author regularly from subject to subject, as he has discussed them, dwelling more at length on those topics to which he is known to have devoted a peculiar attention.

In a brief preface to vol. i., we are informed that, in now publishing his clinical lectures, the author yields to the frequently-expressed desire of his students, while, in preparing them for the press, he has greatly altered some, corrected all, and made throughout numerous additions. The introductory lecture, extending to forty pages, is full of interest, and contains many observations respecting hospital attendance and clinical study of the highest value, and which cannot be too frequently or too strongly impressed upon students. Trousseau is an advocate for the student of medicine attending the hospital from the very commencement of his studies—“*Du jour qu'un jeune homme veut être médecin, il doit fréquenter les hôpitaux.*” In this opinion we are at one with our author; and we can bear testimony to the truth of the following passage, in which he graphically describes the results of an early and constant hospital attendance:—“The student,” he says, “should be seeing, always seeing patients. The confused materials which he thus amasses, without order or method, are nevertheless excellent materials: useless to-day, they are long afterwards to be found buried among the treasures of memory.” Who is there capable of judging, who does not feel the truth of the personal testimony which the author in eloquent terms bears? “*Arrivé aujourd'hui à la vieillesse, je me rappelle les malades que j'ai vus il y a quarante ans, lorsque je faisais les premiers pas dans la carrière: je me rappelle les principaux symptômes, les lésions anatomiques, les numeros des lits, quelquefois les noms des malades qui, à cette époque si éloignée, ont frappé mon esprit.*” Contrary to the practice universally pursued in this country, and to the advice almost invariably given, Trousseau, while admitting that it is not of much consequence whether the student commences with the surgical or medical wards, recommends the earlier frequenting of the latter as perhaps more profitable. He estimates at their proper value the surgical operations which, at this early period, lead captive the youthful imagination; the student learns nothing from these: “*Il n'assiste qu'à un spectacle stérile pour lui.*” It is altogether otherwise, when, after a time, with a

knowledge of anatomy and physiology, the student witnesses the performance of delicate operations. The following reflection has no doubt occurred to others than Trousseau:—"I have always observed that youthful students are more charmed with those operations which require about as much intelligence on the part of the surgeon as the young butcher must possess in order to cut up an ox, than by those marvellous procedures, those delicate and skilful manœuvres, which exhibit the true surgeon, and which command the admiration of those who, already fully instructed, are capable of comprehending and appreciating them." In our author's opinion, the really great advantage of an early attendance on the hospital, lies in the student being brought in contact with patients,—"*He becomes accustomed to see patients.*" There is much in these few words,—"*He reads in their countenance the gravity of the ailments under which they labour;*" he feels the pulse, and learns to appreciate its different qualities, etc. etc.; but, over and above, he profits largely by the lessons, and specially the "familiar conversation," of his teachers and fellow-students. So engrossing is medicine that Trousseau can only permit a very short time to be devoted to the study of the accessory sciences. We can readily believe that all may not be prepared to subscribe to his notions respecting the value of chemical studies, for example; nevertheless we feel that there exists, for the most part, much truth in the following observations:—"It is necessary," he remarks, "before you enter on your medical career, that you should have acquired a sufficient knowledge of chemistry and of physical science to enable you to understand the application of these sciences to medicine; but I deeply deplore the time which is lost in acquiring too extensive a knowledge of chemistry." Again, "Chemistry only renders to Medicine very limited service:" . . . "as a general rule, the individuals most learned in chemistry are poor physicians, and the best practitioners have been in all times but sorry chemists." Lastly, "The life of an intelligent man is hardly sufficient to enable him to acquire a knowledge of physiology, medical and surgical pathology, and therapeutics; why, then, require a student to waste his attentions upon accessory studies, which, without being completely useless, are nevertheless of little importance compared to the sacrifice of physiology, clinical studies, and therapeutics, without which he cannot possibly become a physician?"

Passing now to an examination of the subject-matter of the volumes, we find the first ten chapters or lectures of vol. i. occupied with a description of the *Eruptive Fevers*, including, in the order named, Scarlatina, Rubeola, Variola, Varicella, Roseola, Dothiéntérie (Typhoid Fever), Typhus, Mumps (Oreillons). To these there succeed two interesting chapters, the one occupied with an inquiry into the specific nature of the maladies (spécificité), the other being devoted to contagion. These chapters need not detain us: there are, however, in them some particulars of special interest to which a brief

allusion may be made. Speaking of the difficulty there exists in determining the period of incubation in Scarlatina, the author instances the following case, which fell under his notice in 1859, and in which the period did not exceed twenty-four hours :—

“A London merchant had conducted one of his daughters to Eaux-Bonnes in the Pyrenees, and had passed the winter with her at Pau. He was returning to England, and passed through Paris, where he proposed to remain some days. His elder daughter, who resided in London, impatient to meet her father and sister, left home, and, in crossing the chaunel, was seized with fever and sore-throat, which, on her arrival in Paris seven or eight hours thereafter, had developed into a very severe attack of Scarlatina. She alighted at the hotel almost at the same instant as her father and sister arrived from Pau. The latter shared the same room as her elder sister, and twenty-four hours afterwards manifested the first symptoms of Scarlet Fever, which proved benign. There was Scarlatina prevalent in London ; but the disease had no existence at the time in Pau.”

Instances of Scarlatina, in which the premonitory symptoms were unusually protracted, are also referred to, and one case, altogether exceptional, is cited, where the eruption did not make its appearance till the eighth day. Trousseau holds that very imperfect notions are entertained respecting the desquamation in Scarlet Fever. “La desquamation,” he says, “dans la Scarlatine est un phénomène assez mal connu de la plupart des médecins.” In proof of this, he contrasts the ordinary statements respecting the period of desquamation, and what is actually observed in practice. “I have shown you this morning,” he remarks, “two women : in the one, desquamation still continues on the seventieth day of the disease ; in the other, it is already in full progress on the thirty-fifth.” On another important point our author differs from the opinion usually advanced, namely, that when the eruption of Scarlatina is florid, bright, and well thrown out (*bien sortie*), the case is likely to be free from anxiety. “Il faut dire le contraire,” observes Trousseau. The gravity of scarlet fever, like that of small-pox, is in direct relation to the intensity of the eruption.—(P. 10.) Very interesting are the remarks of Trousseau on the complications and sequelæ of the febrile disorders. He has frequently seen Chorea, Rheumatism, Pericarditis follow Scarlatina, as well as the more commonly recognised Albuminuria, Anasarca, and Glandular enlargements. Passing over *Measles*, of which chapter ii. treats, attention being chiefly directed to its accidents and complications, we find in chapter iii. an able and complete resumé regarding Small-Pox. Trousseau insists strongly on the importance of a careful study of this disease, and views it according to the example laid down by the illustrious Sydenham, whom he styles “l’Hippocrate Anglais.” There are two observations of special importance, which, under this head, we must note : the one has reference to the occurrence of paraplegia in variola, the other to albuminuria. As to the former, “*Paraplégie Variolique*,” as the author expresses it, we find this intimately associated by him with the lumbar pain, which is of almost invari-

able occurrence as a premonitory symptom of Small-Pox. The following passage contains his view :—

“ At the same time as the shivering, the perspiration, fever, and vomiting, there occurs a marked phenomenon ; that is, the lumbar pain (*la rachialgie*), a premonitory symptom of Variola hardly ever absent, and which does not manifest itself with the same degree of violence in any of the other febrile disorders, equally severe in their nature, with the single exception of Yellow Fever. This rachialgia is not a mere muscular pain, it depends on the condition of the spinal cord itself, and of this we have the proof, in a considerable number of cases,—last year, in the space of a few days, I was enabled to show you two examples,—this lumbar pain is accompanied by *paraplegia*. . . . Sometimes the paralysis affects the bladder, patients have retention of urine, or at least a marked dysuria. Ordinarily of brief duration, these paralytic accidents sometimes continue to the ninth or tenth day of the disease, more frequently they cease with the development of the eruption.”—Page 63.

Unless aware of the occurrence of this peculiar nervous phenomenon in the early stage of Variola, the practitioner might easily overlook it, and there can be no doubt that a minor degree of the paraplegia thus described by Trousseau has often been overlooked. The patient complains of lumbar pain as well as pains in the limbs, these he speaks of very frequently as muscular or rheumatic ; in such circumstances, however, if careful examination be made, it will be found that with the pain there exists a degree, sometimes sufficiently remarkable, of loss of power over the lower limbs and bladder. Trousseau does not refer to the occurrence of a severer paraplegia, after the eruptive stage in variola has passed. Such, however, is familiar to physicians of extended experience, and may be regarded as analogous to the paralysis of the like kind, which is so frequently found in connexion with Diphtheria, and less frequently with other blood disorders. On *Albuminuria* in Variola, Trousseau observes as follows :—

“ Albuminuria is another complication of the disease, and it is nearly as frequent in confluent Variola as it is in Scarlatina. There is, however, this difference, that in Scarlatina the albuminuria appears during the decline of the disease, while in Variola it occurs at its height.”

The author refers to the observations of M. Abeille, who found albuminuria in one-third of the cases of simple Scarlatina and confluent Variola which he examined. We are satisfied alike of the correctness and the importance of these observations. In our own experience the albuminuria of the desquamative period of Scarlatina has been even more frequent. The amount of albumen present in the urine in many instances is, however, very small, and its presence transient enough ; still it exists, and is to be connected with the desquamative stage of the disease. In Variola it is very different, occurring at another period altogether, while fever and visceral congestions exist ; it is in such circumstances, we apprehend, more intimately connected with a true renal hyperæmia than in the former case. What gives support to this view is the occurrence not very unfrequently of hematuria in Variola ; not the hematuria in the confluent form of the disease, which is properly regarded as a

truly hæmorrhagic phenomenon, and which is then seen in connexion with other forms of hæmorrhage, but hæmaturia alone and independent, in cases, not of confluent variola, but in which the disease has assumed its milder type.

For an admirable and most interesting account of Vaccinia, in relation with which the important questions of regeneration of the cow-pox and the re-vaccination are fully discussed, we must refer our readers to the volumes themselves. A brief sketch of Varicella and Roseola, in chapters vi. and vii., bring us to the subject of *Dothiënentérie*. As the pupil of Bretonneau, we are of course prepared to find our author employing the expression first used by his master. Many indeed are the designations under which the particular form of fever he thus describes has been known. We have the same objections as Trousseau to the expression Typhoid Fever, and assuredly Gastric, Malignant, Putrid, Adynamic, are as faulty; he prefers *Dothiënentérie*, because it indicates the peculiar lesion of the bowels, which is of constant occurrence in this fever; for the like reason, *Enteric Fever* and *Enteric Typhus* are unobjectionable though not equally precise terms. In chapter viii., devoted to the consideration of this most interesting disease, we find first of all the specific morbid condition of the intestines described, the affection of the Peyerian patches, and of the mesenteric glands. In treating of the former, our author employs the expression "*éruption furonculeuse de l'intestine*." The occurrence of perforation of the bowels as an accident to be apprehended in the course of Enteric Fever is described, and the fatal peritonitis with its assemblage of unmistakable symptoms which succeeds. It is of great importance to hold in remembrance, that in such cases, without the occurrence of perforation, peritonitis does occasionally supervene. Our author speaks of "*Péritonite sans perforation*," and refers to an interesting memoir on this subject by M. Thirial, published in 1853, under the title of "*Péritonites développées spontanément*." The occurrence of hæmorrhage from the bowels in this fever is illustrated by a reference to some valuable cases. In its treatment, Trousseau places his chief reliance on sulphuric acid and preparations of rhatanhy; he has also employed turpentine, as recommended by Graves and Dr Wood of America. In his account of the characteristic eruption on the skin (*taches rosées lenticulaires*), and the other appearances and symptoms which are met with, our author is very exact. He describes different forms of the disease, being, as we think, upon this head too ready to subdivide; he has six different forms,—Mucous, Bilious, Inflammatory, Adynamic, Atonic, and Malignant. In speaking of the inflammatory affection of the Parotid gland, which has been observed by many writers to occur in the course of enteric fever, Trousseau expresses the opinion that the feature in question is not to be regarded as—such was the notion of the Ancients—a crisis or metastasis, but as a very formidable complication (*très funeste complication*); hardly ever, he remarks, a little

further on, have I observed a patient with Dothiéntérie thus affected, recover.—Page 170. The complication in question is certainly not common in the Enteric Fever of this country, and it is somewhat remarkable that in the few instances in which we have ourselves seen it to occur, the sufferers have been foreigners,—in the case of two, Danish sailors. The inflammation and subsequent suppuration as we have found these, have not been confined to the Parotid glands, but have extended to the cellular tissue of both cheeks and neck, and to a greater or less extent involved all the parts in their vicinity. Neither is our experience of this complication so disastrous as that of Trousseau. In the two cases referred to, recovery resulted; it is, however, proper to add that a different termination seemed imminent in both, and that had it not been for the most careful watching and nursing in one of the two, death had assuredly occurred. We have been particularly pleased with the observations of our author on the required treatment of this form of fever, very specially those on the diet of the sick (*regime diététique*). His remarks form an excellent commentary on the aphoristic statement of Celsus, “*Opportunum medicamentum est opportune cibus datus.*” He points out the mischief which a too spare diet is sure to cause, and how fallacious is the popular advice “to starve a fever.” “*Je suis convaincu que le système de l’inanition a souvent été porté à un dangereux excès, et qu’une abstinence prolongée a été, dans beaucoup de cas, la cause de la mort des malades atteints de fièvre.*”—P. 185. In the admonition given respecting the administration of food, and the employment of stimulants in fever, a subject in connexion with which the Dublin physicians have long been famous, Trousseau is found adhering to the maxims of Dr Graves; it is indeed when thus treating that he takes occasion to speak in the strongest terms of approbation of that lamented physician.

“Allow me, gentlemen,” he says, “to strengthen my own authority by an appeal to that of the man whom I consider the greatest clinical physician of our age, I mean Graves, whom I so delight to quote, whom I so frequently consult, and who ought to be your *vade-mecum*.”

Among the complications of Enteric Fever we find reference made to different forms of paralysis and dropsy, and as liable to occur during the progress of convalescence from it, to dissolution of the cornea,—after the putrid form of fever, affections of the larynx, more particularly oedema of the glottis necessitating the performance of tracheotomy, erysipelas, spontaneous gangrene of the limbs, and, lastly, paraplegia.

Of *Typhus*, as we understand the fever so named in this country, M. Trousseau has evidently had a very limited clinical experience,—a circumstance which will surprise no one familiar with the fact, that *Typhus* is a very rare disease in Paris and throughout France. While, therefore, more than eighty pages are devoted to Dothiéntérie, *Typhus* is discussed in less than three. In this brief chapter on *Typhus*, reference is made to the question upon which professional opinion in our own country is still divided, namely,

the identity or non-identity of typhus and the enteric fever. The observations of Dr Jenner, of the American physicians Drs Gerhard and Shattuck, and others, are referred to. Wisely our author does not express any confident opinion on this particular point, for the very good reason that he has "never had the opportunity of *studying* typhus at the bedside;" but from the perusal of the English and American authors who have written on the subject, he inclines to place himself among those who regard the two fevers as non-identical. We gather from what is stated that the impossibility of the Typhus contagion giving rise to Enteric Fever has had considerable influence in determining the opinion of our author.

In succession to the *Eruptive Fevers* come the *Exanthèmes*. *Rashes*; and first among these, the *Exanthèmes Sudoraux*,—Cutaneous Rashes occurring at the period of the year when the temperature is elevated, and connected with an exalted cutaneous function. "These eruptions," remarks the author, "occur in connexion with an abundant perspiration, and are nowhere more prominent than on those parts of the body which are habitually its seat." The appearance of such eruptions is made the subject of an interesting discussion respecting their physiological and pathological bearings. To Urticaria (Fievre Ortiée), Zona, Erythema Nodosum, and Papulatum, separate chapters are devoted. In connexion with Zona (Herpes Zoster) particular attention is directed to the neuralgia, so often intractable, which occurs with, and still more frequently succeeds the cutaneous disorder; and when discussing the Nodose Erythema, we find a full acknowledgment of that intimate relation which it has to Rheumatism. "L'existence de ces douleurs articulaires semble indiquer la nature rhumatismale de l'erytheme noueux."—Page 293. Chapter the eighteenth treats of *Erysipelas*, and principally *Erysipelas of the Face*. This disease is illustrated by a reference to certain cases seen by the students, who are addressed, "Messieurs, nous avons en ce moment plusieurs malades atteints d'erysipele." To one of these Trousseau attached a special interest, as exhibiting a progress different from the others.

"Number IV. of men's Ward, who at the period of his entrance to the hospital had a very severe sore throat, with implication of the sub-maxillary glands; at the first examination I predicted that, on our second visit, we should find an erysipelas of the face, and the result verified my prognosis. . . . On depressing the tongue and examining the pharynx, we detected a very great degree of redness of the uvula, the velum palati, the pillars of the fauces, and the tonsils. With such appearances I conjectured the occurrence of a quinsy (angine catarrhale), or of an erysipelatous inflammation of the parts."

The prognosis offered was based chiefly on the existence of a greater amount of pain, and of redness of the fauces with much swelling, of higher fever, and implication of the cervical glands, than what occur in the more ordinary forms of sore throat. The throat in fact was the seat of erysipelas, which, in the course of another day, gained the nasal fossæ, and appeared upon the face. Trousseau explains how this progress of erysipelatous inflammation has been misunder-

stood, how such cases as that cited have been described as instances of metastasis, and properly insists upon the affection of the face being nothing more than the progress of the faucial inflammation. A M. Gubler, the author informs us, was the first to describe this march of erysipelatous inflammation, "il y a une dizaine d'années;" it may be so in France, but in our own country we have been familiar with this circumstance in the nature of Erysipelas for a far longer period than ten years, and can remember the great importance assigned to it by our revered perceptor the late Dr Alison. We thoroughly appreciate the author's observations on the treatment of Erysipelas. He shows how that must vary according to the nature of individual cases, how one particular plan of treatment cannot be rendered suitable for all.

"In certain circumstances," he remarks, "you see me interfere with sufficient energy; in other circumstances, I watch, observing attentively the phenomena, ready to bring, if need be, to my aid, when the indications for so doing present themselves, the means which medicine has placed at my disposal. To understand how to wait (*savoir attendre*) is a valuable knowledge in our art; and a prudent expectation readily explains much of the success which occurs in practice; especially does it explain the successful results sometimes obtained by the votaries of Hahnemann."—Page 304.

In a brief notice of the *Erysipelas of newly-born children*, the essential difference between it and true Erysipelas is insisted upon. The former is a puerperal affection, and participates in the gravity of all such maladies;—it is styled by Trousseau "*fatalement mortel*."

The last disease described under the head of *Exanthemes*, is the singularly interesting and important one of *Diphtheria* (Diphtherie); to its consideration upwards of a hundred pages are devoted. By Trousseau, Diphtheria is regarded, just as Bretonneau originally described it, as a specific malady, contagious in its nature, prone to appear on the mucous surfaces and on the skin, but showing a marked preference for the throat and air passages. Of Diphtheria, he describes first of all the formidable disease, with which of late years practitioners in this country have again become familiar, as affecting the pharynx and larynx, *Angine Diphtherique et Croup*; devoting a special section to the form of the disease attacking the same parts, but presenting characters of greater malignity than those ordinarily witnessed, the "*Diphtherie Maligne*." This terrible disorder presents much less, sometimes hardly any appearance of a local character, and, unlike the former, shows little tendency to terminate fatally by suffocation; its dire results are induced after the manner of malignant diseases (*maladies septiques*), that is, by a poisoning of the entire system. We need scarcely say that the whole of our author's observations on this subject are full of interest and instruction, very specially so his remarks on the peculiar sequelæ of Diphtheria, the various forms of paralysis, the albuminuria, etc., and on the performance of tracheotomy as a remedy in cases of the Diphtheritic Croup. As a writer on this subject, Trousseau became known as early as 1835, in the "*Dictionnaire de Medecine*;" and

in the article there contained, he informs us that he has been witness, while the pupil of Bretonneau, to various extensive epidemics. We presume our readers' acquaintance with some at least of our author's previous contributions to the literature of Diphtheria, otherwise we should have been tempted to linger upon the pages devoted to its consideration in these volumes, among the most valuable which they contain. Under the head of "*Localisations diverses de la Diphtherie*," the following varieties are described:—palpebral, cutaneous, vulvar, vaginal, anal, preputial, and buccal. Treating of Cutaneous Diphtheria (*la Diphthérie Cutanée*), the author remarks,

"It manifests itself most frequently on the sores produced by blisters, in the folds which form in the skin of fat children, on excoriations of the surface, however produced, over the vesicular eruption of herpes, in chaps of the nipples and breasts, over abrasions of the skin and scrotum, sometimes over very slight solutions of continuity; in a word, wherever the integument has been deprived of its epidermis."—Page 350.

No one, so far as we are aware, has ever seen Diphtheria appear on the sound cutaneous surface: previous deprivation of its cuticle or ulceration is necessary for its development, when, as Trousseau long ago remarked, the skin approaches more or less to the organization of mucous tissue.

In succeeding chapters other affections of the pharynx are considered. First in order, the *Angines Couenneuses*, varieties of Angina, with which French writers have long been occupied. Trousseau truly remarks, that it were a very easy matter to multiply the varieties of such disorders. Under the head "*Angines Couenneuses*," literally, buffy coat, which has been very vaguely employed, are included those affections of the pharynx which possess the common character of a plastic exudation visible on its surface. Microscopic examination of such exudation reveals the presence of molecular granules, broken down epithelial cells, with a few pus and blood corpuscles. Cases of this nature are very frequently neither more nor less than herpes of the pharynx; and in reality identical with the form of ailment very loosely described in our own country as aphthæ. Trousseau has observed that it is not always possible to make a diagnosis between the *Angine Couenneuse*, and other severer forms of throat affection; in the way of treatment the former requires little more than attention being directed to the "*primæ viæ*," and the employment of cleansing gargles. When such a difficulty in diagnosis as that referred to presents itself, his shrewd advice is to act as if the ailment were certainly one of the more serious character. Among the diseases of the same parts to which a further consideration is given, are *gangrenous sore throat* (*Angine gangreneuse*), viewed as determined by excess of inflammatory action, and occurring as a complication of certain severe diseases, dysentery, typhoid fever, etc. And again, *phlegmonous sore throat* (*Angine phlegmoneuse*), the disease familiar to us under

the good old name, as improved by Cullen, of *Cynanche Tonsillaris*. Lastly, under the head of *Angines*, we have an account of *Muguet* or *Blanchet*. We quote the opening sentences—

“Gentlemen, In No. 10 of our ward *Saint Agnes*, there is a woman who, about a fortnight before her entrance, was confined in the hospital of Lariboisière. She left that institution quite re-established in health, and has come to the Hotel-Dieu with her child, whom she is unable to nurse, as her confinement was premature. This poor child, dying of hunger, is in a deplorable condition. You have seen him to be the subject of muguet, covering the mucous membrane of the mouth. I take the opportunity afforded by this case to speak to you of the disease, which, in pathological treatises, is confounded with the “*angines couenneuses*,” although with them it has very little analogy. *Muguet* or *Blanchet* is an affection characterized by the presence of minute concretions of seed-like appearance; at first transparent, but soon of a dull white, developed on the surface of mucous membranes, and principally on that of the mouth. Ordinarily muguet appears at first on the tongue, at its extremity, upon its edges; at other times, on the internal surface of the lips and cheek. *Le millet*, this is still a name applied to the affection, shows itself also on the *velum palati*, on the tonsils and the pharynx. These concretions multiply, they unite together, and form irregular patches of larger or smaller size, more or less thick, of a creamy whiteness, and cheesy, like coagulated milk. Sometimes their aspect is yellowish, sometimes grey; and in these cases they may be confounded with the concretions of diphtheria.”—Page 458.

The mistaking muguet or aphthæ, as the affection is ordinarily termed with us, for diphthéria, has, we are satisfied, been of not unfrequent occurrence in this country; in this way the very remarkable success which has attended the treatment of supposed cases of the latter affection can alone be accounted for, or reconciled with the very different experience of other practitioners. The two affections are, however, readily distinguished by their own peculiar characters. Muguet never appears on those mucous surfaces which are normally destitute of epithelium; it is not met with, as the diphtheritic pellicle often is, in the nasal fossæ. If the former appear coating the epiglottis it is never found within the larynx, if in the œsophagus, never beyond the cardiac orifice of the stomach. Muguet, strictly speaking, is an affection of the mouth; sometimes it is quite local, at others, however, it manifests a general character. Microscopic examination—and this we believe constitutes an important means of distinction between muguet and all other affections of the same parts—reveals the existence of a characteristic element; a cryptogame, analogous to the *sporotrichium*, according to M. Gruby; a *mucédinée* (*oidium albicans*), in the opinion of M. Robin. In many chronic diseases of adult as well as infantile life, muguet occurs. For its treatment, when a merely local affection, the mel boracis is the best of all applications. When, on the other hand, the disorder is found in connexion with a bad condition of the general health, dependent, as is usually the case in children, on defective alimentation, it is specially necessary that a nourishing diet should be afforded. As remedies in such cases Trousseau speaks highly of the prepared chalk, and the tris-nitrate of bismuth.

Chapters xxiv. and xxv. are occupied with *Affections of the*

Larynx, the former, with that peculiar and interesting disorder which English writers, and more particularly Dr Ley, have done so much to illustrate—the *Laryngismus Stridulus*, or false croup. Our author's reference to the literature of this disease is far from being ample; and were space at our disposal we might show that the Croup of Home and other British writers, to which allusion is made in this chapter, has not been fully comprehended. There is a broad line of distinction between the inflammatory or true croup of Great Britain and the croup with which French physicians are familiar, and which Bretonneau, and now Trousseau, have described under the name of "angine diphtherique et croup;" for the present, however, we must be content with merely stating this proposition. Under the name of *Angine Laryngée Œdémateuse*, that affection which is more generally recognised as the *Œdema Glottidis*, is described in chapter xxv. Our author strongly objects to the employment of the latter term; for our own part we see no great objection to it. The pathological condition of the epiglottis and rima glottidis, to which the term applies, is certainly less frequently determined by inflammation than it occurs as the result of diseases, non-inflammatory in their nature.

The remaining three hundred pages of volume first are occupied with the consideration of bronchial and pulmonary affections, *Affections Bronchiques et Pulmonaires*, and certain diseases of the Heart. Under these heads we have chapters devoted to whooping-cough (coqueluche); asthma; hæmoptysis; bronchorrhœa; phthisis, too briefly discussed; gangrene of the lung; abscess of the lung, specially following pneumonia; treatment of pneumonia; pleurisy; effusions of blood into the pleura, the result of injury; pericarditis; organic diseases of the heart; and, finally, angina pectoris. Under many, if not all, of these heads, there are observations calling for special remark. We must, however, limit ourselves to a very few. In the treatment of pneumonia, while questioning the propriety of blood-letting, we are glad to find that Trousseau has far from abandoned, in many cases, the enforcement of an antiphlogistic regimen and the use of some of the most powerful antiphlogistic remedies. The efficacy of antimony, he maintains; preferring, to the tartar emetic, the so-called *Kermes* (the yellow sulphuret of antimony). For pneumonia, accompanied by delirium, our author prescribes musk. Pneumonia of the upper lobes he regards as not necessarily more serious than the disease seated in its ordinary position; and the former he has not found to be invariably accompanied by delirium. Cases of the nature in question are detailed. Chapters xxxiv. and xxxvi., on Paracentesis of the Chest and of the Pericardium, are among the most remarkable in the whole range of these volumes. As is well-known, Trousseau has given great attention to the employment of thoracentesis as a remedy in pleuritic effusion; and, in the work before us, we have him counselling its performance, while he lays down

excellent rules for the guidance of the practitioner, based upon his own extended experience both of the disease and of the remedy. The more hazardous operation of paracentesis pericardii, Trousseau has himself performed, and the details of a case are given. The patient, a young man of twenty-seven years of age, died five days thereafter. The following is the description given of the steps of the operation :—

“ With a bistoury an incision was made in the middle of the region of extended dullness over the heart, below the nipple, and in the intercostal space adjoining. The skin and muscles were cut with the greatest care, and the pleura reached. This membrane in its turn was cut, and the finger being introduced into the cavity of the chest, the resistance due to a distended pericardium was felt. The beating of the heart could not be distinguished under the finger. While successive incisions were practised, the divided tissues were separated by means of a grooved probe. At length, as the point of the bistoury penetrated a little further, there flowed along the blade serous fluid, somewhat muddy and slightly red. The incision was then prolonged a very little way, and there escaped by the wound a stream of the like appearance, which was spilt on the sheets, and of which about four ounces were collected in a dish. This liquid immediately coagulated, becoming like gooseberry jelly; then the flowing ceased. Several gum-elastic probes were introduced, but no more fluid escaped. On placing the patient on his left side there flowed forth about double the quantity which had previously escaped of a serous fluid, citron-yellow in colour, consequently very different from the former, and which, when received in a vessel, only underwent an imperfect coagulation, while its amber colour contrasted with the gooseberry jelly aspect of the first fluid. The autopsy revealed that, of the two fluids, one escaped from the pericardium, the other from the pleura.”—Page 701.

We must now turn to an examination still more brief of the *Second Volume*, the earlier chapters of which relate to certain diseases of the Nervous System, including Epilepsy, Epileptiform Neuralgia, Apoplectic Seizures in their relation to Epilepsy and Eclampsia, Infantile Convulsions, Eclampsia of pregnant and parturient females, Tetanus, Chorea, and various forms of Paralysis, etc. Our author commences his account of Epilepsy by narrating certain cases, and pointing out the distinction between the complete epileptic attack (*grand mal*), and the vertiginous seizure (*petit mal*). The former generally precedes, or is transformed into, the latter. The case of a young man is however referred to, in which the converse obtained, the real convulsive attack occurred first, and afterwards the vertigo. Among other clinical instances of Epilepsy to which reference is made, there is that of a young and vigorous American, called the *blue man*, on account of his skin having acquired a blue coloration from the nitrate-of-silver treatment to which he had been subjected in the United States. His epilepsy, however, was not thereby cured, and he was extremely desirous to undergo castration; no one in Paris could be induced to perform the operation, and, accordingly, he left both the hospital and France. In his consideration of Epilepsy we find Trousseau referring to many interesting particulars in its history, and the relation which it bears to other diseases, more particularly to Eclampsia, Hysteria, and Mental Alienation. In the treatment of this disease we are glad to find a favourable opinion

expressed respecting belladonna, a remedy which seemed to accomplish much in the hands of the late lamented Schroeder van der Kolk. Latterly, atropia has been employed by Trousseau in preference to belladonna. He is far from regarding this remedy as a specific in epilepsy; but has found it to do more service than any other, to be superior to the preparations of silver, copper, or zinc. The term "Nevralgie Epileptiforme" is applied to that form of Tic Douloureux which, having its ordinary seat in one or other of the branches of the trifacial, is associated with involuntary movements affecting the face, neck, and limbs. This malady is regarded as nearly incurable; the only remedies which avail to mitigate its severity are large doses of opium and division of the pained nerve. The chapters on *Chorea* and its allied disorders of the nervous system are full and well worthy of study. The intimate connexion of *Chorea* and *Rheumatism* is insisted upon.

"But of all the morbid causes which predispose to the affection, the one whose action is most marked and incontestable, is assuredly rheumatism. The relation of rheumatism and Saint Vitus' dance has been signalized by Hall, Copland, Bouteille, Abercrombie, Begbie, Gabb, Richard; and others have noted the coincidence of pericarditis and endocarditis with the nervous disorder. . . . The interesting researches of my colleague at the hospital for children (M. Sée) lead to the conclusion that almost always the sufferer from chorea has more or less of rheumatic pain."

In the treatment of *Chorea*, Trousseau places most confidence in the preparations of strychnine; but he always lays down careful regiminal and hygienic rules, which must be observed. In chapter forty-seven an important variety of nervous disorders is described under the name of "*Maladie de Duchenne, ou Ataxie Locomotrice progressive.*" M. Duchenne of Boulogne—after whom Trousseau, conformably to a practice in which he is prone to indulge, proposes to call this disease—thus describes its fundamental characters: progressive abolition of the co-ordination of muscular movement, and apparent paralysis, contrasted with the integrity of muscular force. A patient thus affected cannot walk properly; he staggers in his gait, making great efforts to maintain his equilibrium; it is clear that the muscles do not correspond, as they should, to the guidance of the will. The loss of proper balancing power is most conspicuous when the patient makes his first step; once started, he walks badly, throwing his legs to right and left, but still he walks. The patient is most apt to lose his balance when in the act of turning, and, unless supported, will fall to the ground. In its confirmed condition no disease is more readily recognised than this; but the physician must endeavour to acquaint himself with the earlier symptoms of the malady, if his art is to be of any avail in its removal. Among such symptoms are pain peculiar in its nature, for it darts like lightening, coming and going with extreme rapidity, nocturnal incontinence of urine, spermatorrhœa, anaphrodisia, and transitory paralysis. Even when the want of co-ordinating power is most

marked, the intellectual faculties remain altogether unimpaired. Many instructive remarks bearing on the etiology and pathology of this remarkable affection are given by Trousseau, and reference is made to several examples which have fallen under his own notice. This discussion is succeeded by a short chapter on *Alcoholism*; and thereafter the important subjects of *Spermatorrhœa* and *Nocturnal Incontinence* of urine, receive a full share of attention. When the incontinence is limited to night, Trousseau reposes most confidence in belladonna; when both by day and night escape of urine occurs, he gives strychnine in addition to the belladonna. Having considered, *seriatim*, certain forms of *Hemiplegia*, *Facial palsy* (which he takes as much pleasure in calling *Bell's paralysis*, as the late Dr Todd took trouble to dissuade his students from doing, regarding the connecting distinguished names with diseases more in the light of an insult than a compliment), and *Meningitis* (Fievre Cérébrale), our author finds an appropriate transition to stomach and other abdominal ailments by noticing, briefly in the first instance, *Vertigo a stomacho læso*, and thereafter *Dyspepsia*, *Gastritis*, *Gastric Ulcer*, *Diarrhœa*, *Cholera*, *Disorders of Dentition*, *Dysentery*, *Constipation*, *Fissure of the Anus*, *Biliary Calculus*, *Hydatids of the Liver*, *Diabetes*, etc.

To that peculiar form of affection, which, both in our own country and on the Continent, has of late attracted some attention,—we mean the *Exophthalmic Goitre*, as some have styled it,—M. Trousseau devotes a considerable space. He suggests for the disease the name of *Maladie de Graves*; but for this there is as little reason assigned, as by Hirsch and others, who have called it *Maladie de Basedow*. The fact is, that Dr Parry and Sir Henry Marsh had preceded both Graves and Basedow in noticing and describing the remarkable assemblage of symptoms which, in the volume before us, is most graphically and truthfully delineated. Quite recently, an animated discussion regarding "Graves' disease" has taken place in the French Academy of Medicine, when Trousseau, Beau, Piorry, and Bouillaud, have all expressed themselves at length regarding its probable nature. Our author, like Dr Stokes and Dr Banks of Dublin, believes that a neurosis, which he is for the present unable accurately to define, lies at the foundation of the disease, whose essential characteristics are, a disturbed circulation, enlargement of the thyroid gland, and prominence of the eyeballs. It is more than probable that the recent publication of the discussion in the Academy, to which we have referred, and the re-appearance in an extended form of the essay on this subject, written many years ago by Dr Begbie, in which, while fully admitting the neurotic character of the ailment, the author vindicates the view he formerly originated of its primarily depending on an impoverished condition of the blood, will serve to direct the attention of the profession more prominently to the subject than has hitherto been the case. With a short notice of *Addison's disease*, *Leukhæmia*, and *Infantile*

Syphilis, and with a somewhat more detailed description of *Gout*, *Intermittent Fever*, and *Rickets*, the second volume closes. To have discussed the contents of these volumes with anything like the fulness which they deserve, would have been altogether to exceed the space at our disposal. We willingly admit that we have derived the greatest pleasure and instruction from their perusal; that they are monuments of their author's research and of his admirable observing powers: and, having formed this opinion, we cordially recommend them to the notice of our readers.

Physiology and its Aids to the Study and Treatment of Disease. By EDWARD DILLON MAPOTHER, M.D., etc. etc. Pp. 496. Dublin: Fannin and Co.: 1862.

THE object of this work is to lay before the student in a compact form the best established facts in physiology and pathology, and thereby to enable him to prepare himself for examination on these subjects. In order to facilitate his progress, examination papers from the University of Dublin, the Queen's University in Ireland, the London University, the Royal College of Surgeons of England, and the Examiners for Her Majesty's service, are printed at the end of the volume. Of course such a work is not intended to take the place of systematic treatises on physiology or pathology, but merely to refresh the memory of the student, calling back to his remembrance facts he has previously learned, but may afterwards have forgotten. Dr Mapother has performed his task in a creditable manner, and has produced a volume which may prove useful, not merely to the student, but to the practitioner. It has one deficiency, which is perhaps unavoidable in works of this description,—we mean the absence of individuality of opinion upon controverted subjects. This deficiency makes some of the articles bald and unsatisfactory, and will, we hope, induce its readers to refer to the original authorities. The work is, however, carefully compiled, and is well illustrated by engravings copied from the standard treatises.

Part Third.

PERISCOPE.

PRACTICE OF MEDICINE.

ON THE STATE OF THE TEMPERATURE IN ABDOMINAL TYPHUS. BY PROFESSOR WUNDERLICH.

WUNDERLICH has brought together the thermometrical data derived from a careful examination of about 700 cases of abdominal typhus. The course of the disease is typical, the type perfectly characteristic. Irregular cases occur, which, however, are always connected with a special cause. The course of typhoid fever shows two distinguishable thermometric periods: the deposition of, and the subsequent changes in, the infiltrated material, and, in addition, several periods when a change in the course of the disease takes place. The periods and stages of the disease are separated from one another by spaces of time of fixed duration, and occur usually about the conclusion or towards the middle of the weeks of the disease. The period of development occupies two weeks (in slight cases, one and a half; in severe, two and a half to three weeks). The initial stage lasts about half a week. The removal of the deposit may take place in a week, but may extend over several weeks. In mild cases, the disease is at its height for only a week, or a week and a half, exceptionally for two weeks; consequently, including the initial stage, it extends to from eleven to eighteen days. The period of convalescence occupies one to two weeks. The whole disease, therefore, may be gone through in from three to four weeks, rarely in two weeks and a half. In severe typhoid the disease is at its height for from two weeks and a half to three weeks and a half; then follows generally an undecided period of irregular duration; the period of decided abatement occupies a week; the period of convalescence lasts a week; and consequently the whole disease extends from four and a half to ten weeks.

During the first week the temperature increases in such a manner, that in the first three or four days, from morning to evening it is about two degrees more, from evening to morning, about one degree less, or, according to the following formula,—1st day, morning, $98^{\circ}5'$; evening, $100^{\circ}5'$: 2d day, morning, $99^{\circ}5'$; evening, $101^{\circ}5'$: 3d day, morning, $100^{\circ}5'$; evening, $102^{\circ}5'$: 4th day, morning, $101^{\circ}5'$; evening, 104° . In the second half of the week, the evening temperature is from 103° to 104° , the morning temperature about a degree lower. Where the temperature on the first or second day reaches to 104° , or where in a child or an adult the evening temperature between the fourth and sixth days does not rise to 103° , where, in the second half of the first week, there is a considerable abatement of the evening temperature, we have not to do with typhoid; on the other hand, the disease may always be expected when there is in the evening hours a persistent elevation of the temperature.

For purposes of prognosis, the determination of the temperature is of little consequence during the first week; irregularities in its course are always suspicious. The thermometer is only able during the first week to give information regarding the favourable or unfavourable effect of any influence, or of a spontaneous change. In the second week, typhoid fever may be excluded with the greatest probability, if between the eighth and eleventh days the temperature is below 103° ; such a temperature as this is rarely met with at this period in any other disease, and where it occurs, unequivocal symptoms of the other disease will certainly be present. A favourable course during the second week allows us to anticipate a favourable termination of the disease. The course is favourable when the evening temperatures remain

between 103° and 104° , and the morning from one to two degrees lower; when the exacerbations do not begin before ten o'clock in the morning, so that before midnight an abatement takes place; when these conditions remain daily the same, or a diminution of temperature shows itself, generally, indeed, not more than a quarter of a degree; or when there is an abatement on the eleventh, twelfth, and fourteenth days. A retardation of recovery until the fourth week is to be anticipated, when, in the second week, the morning temperature is above 103° , the evening, above 104.5° , when the exacerbations occur early and remain after midnight, and when a fall in temperature about the middle of the week does not take place. All irregular elevations and depressions are suspicious, and should lead us to apprehend the occurrence of relapses and complications. A permanent temperature of 104° is unfavourable, as is also an elevation of the morning above the evening temperatures. A severe form of the disease is to be expected where the morning temperature is above 104° , and the evening reaches nearly 106° , and towards the end of the week a rise takes place. The most unfavourable cases are those where, in addition to the last-mentioned conditions, oscillations are added, even if these consist in diminutions.

From the beginning of the third week, observation of the temperature distinguishes in the most precise manner the slight from the severe cases. In mild cases the morning temperature is regularly at first from 3° to 4° below that of the evening, and reaches in the course of the week the natural standard; the evening temperature diminishes chiefly from the middle of the third week, and in the middle of the fourth becomes normal. The prognosis in severe cases is favourable when the temperature is about a degree lower than in the second week, in this case the principal remissions manifest themselves in the fourth week. Sometimes the temperature remains as high, or rises even higher than in the second week, and the remissions do not take place till the fifth week; in other cases irregularities in the temperature occur, which always render the prognosis doubtful. The approach of death is indicated by a permanent elevation of temperature (in the morning as high as 106°), by a sudden rise to 108° or even higher, or more seldom by a sudden depression to 93° or lower. The beginning of convalescence can only be established by the thermometer, when the evening temperature shows a complete freedom from fever.—*Pragisch. Vierteljahrschrift für die praktische Heilkunde.*

SEEDS OF THE CUCURBITA PEPO, OR PUMPKIN, IN TENIA.

Dr G. R. PATTON of Cincinnati, records (*The Cincinnati Lancet and Observer*, June 1862) four cases of tenia successfully treated by an emulsion of pumpkin seeds. One patient was troubled with the *Bothriocephalus latus*, the others with *tania solium*.

Dr P. says, that "of all the anthelmintics proposed for the extermination of tenia, the seed of the ordinary pumpkin claims our first attention. It is innocuous, inexpensive, readily procured, and by far the least disagreeable of all the vermifuge medicines. Its power to dislodge large fragments of these *entozoa* has never been questioned; but it has not succeeded, in every instance, in destroying them. This results evidently from discontinuing the remedy too soon. By maintaining the treatment from four to six days (unless the head be discovered with the fragments first passed), success would, doubtless, result in all cases.

"The administration of castor-oil during its use is not to be recommended. The emulsion itself is sufficiently laxative in large doses, if a light diet be strictly enforced. By purgation we might defeat our end, by interfering with that intimate contact of the remedy with the head of the parasite, necessary to the production of its full toxicological effect."—*American Journal of the Medical Sciences* for July 1862.

Part Fourth.

MEDICAL NEWS.

PROCEEDINGS OF THE EDINBURGH OBSTETRICAL SOCIETY.

SESSION XXI.—MEETING V.

January 15, 1862.—Dr PATTISON, *President*, in the Chair.

I. INSTRUMENT FOR THE CURE OF CHOPPED NIPPLES.

Dr James A. Sidey showed an instrument which he had repeatedly and successfully used for the cure of chopped nipples. It consisted of a thick ring of gutta percha with an aperture in the centre for the admission of the nipple. Fissures of the nipple usually arose from folds of the skin caused by pressure upon the nipple becoming heated and scalded; and by keeping off the pressure and preventing the opposed sides of the fold from coming into contact, both of which indications were effectually fulfilled by the gutta percha ring, the ordinary remedies could be applied much more efficiently than usual, and at the same time the fissures were prevented from extending. With the aid of this ring he (Dr S.) has cured, in a few days, a case of chopped nipples which had resisted the ordinary remedies for six months.

Dr Alexander Simpson thought that the gutta percha ring would be chiefly of use in those cases where the fissures were seated around the base of the nipple; and would be of less service in erosions at the point of the nipple, where the sucking action of the child would keep up the irritation, and more complete protection would be afforded by an ordinary nipple-shield.

Dr Pattison had, on the recommendation of an Indian lady, tried tincture of Benzöin with good results. He (Dr P.) thought women had themselves often to blame for the occurrence of chopped nipples; and if care were taken to dry the nipple well every time after suckling the child, a great number of cases would be prevented.

Dr Bruce used an ordinary shield and teat for the cure of chopped nipples.

Dr Keiller said that it was of great importance to prevent the formation of fissures on the nipple. To effect this he (Dr Keiller) thought that women before being confined should be told to prepare the nipple by gentle friction, so as to harden it and accustom it to the suction action of the child's mouth. This object might be farther aided by the application of oil or of some astringent lotion.

II. REMOVAL OF POLYPUS BY THE ÉCRASEUR.

Dr Keiller described a case of uterine polypus which he had removed from an old lady, a patient of Dr Pow. The polypus was attached to the posterior lip of the uterus, and as the pedicle appeared to be narrow, he (Dr K.) thought there would be no difficulty in removing it in the ordinary way by tearing it off with a pair of forceps. On seizing hold of the polypus, however, with the forceps, he (Dr K.) found that the pedicle was thicker than he at first imagined, and could not succeed in tearing it off. He then began to cut it with the scissors, but on further consideration thought it would be a good case for the application of the écraseur. He accordingly desisted from his attempts to cut it off with the scissors, pulled the polypus well down, and placed the chain of an écraseur over the pedicle and portion of the posterior lip of the uterus, and soon succeeded in removing the polypus along with the included portion of the uterine lip. No bleeding took place except in a slight degree from the incision made with the scissors, and the patient made a good recovery. He

(Dr Keiller) had had many cases of uterine polypi which he had removed with the forceps. His usual plan of proceeding was the following:—He introduced the two first fingers of the left hand as close to the root of the pedicle as possible, and slipping a pair of long forceps furnished with teeth between the fingers of the hand previously introduced, he seized hold of the pedicle, and, partly by lacerating it and partly by torsion, endeavoured to remove the tumour. There were some cases, however, where it was not possible to remove the polypus in this way, and where it was necessary to use the knife, scissors, or a sharp hook to cut through the pedicle. In such cases the *écraseur* would be found a most efficient and safe instrument.

Dr Alexander Simpson remarked that the ligature was comparatively seldom used now to effect removal of uterine polypi, as the sloughing of the strangulated mass, and the presence of the instrument in the passages for several days, sometimes gave rise to great irritation. He (Dr S.) had twice seen alarming hæmorrhage occur after removal of polypi, where it was hardly to be expected. In one case, where the pedicle was narrow, he cut it through with the polypotome, and the bleeding which took place could only be restrained by the direct application of a solution of perchloride of iron. He (Dr S.) regarded the galvano-caustic apparatus, such as is used by Middeldorp for the removal of nasal polypi, urethral caruncles, and tumours of various kinds, as being well adapted for the extirpation of uterine polypi. From its smallness, the wire can be better adapted to the pedicle than the chain of the *écraseur* or any other instrument.

III. REPEATED TWIN BIRTHS.

The Secretary read a communication from *J. Lewis Brittain, Esq.*:—"The following case of frequent twin pregnancy has occurred to my father, a practitioner in England. Mrs J., æt. 47, was first pregnant at the age of 25. She has had 14 pregnancies and 25 children, having had twins 11 times. Of the 11 cases of twins, in 8, both children were born at the full time; in 2, one foetus was aborted about the third month, the other being carried to the full time; and in one, she miscarried both at the fourth month.

"Of the 8 cases in which the children were born at the full term, the sex was boy and girl, 5 times; both girls, twice; both boys, once.

"In the miscarriage case they were boy and girl; in the first case of miscarrying, one of the two, a girl was aborted, a boy born at full time; in the second, a boy was aborted, and another carried.

"Mrs J.'s mother had twins once; but she never heard of another instance in either her or her husband's family.

"Mrs J. was delivered—

		Presentation.
1839, Sept. 9,.....	Boy and Girl.	Full time. Both head.
1840, July —,.....	Girl.	Four months. Not observed.
1841, Jan. 12,.....	Boy. ¹	Full time. Head.
1842, Nov. 22,.....	Girl.	Full time. Head.
1843, July —,.....	Boy and Girl.	Four months. Not observed.
1844, July 21,.....	Boy and Girl.	Full time. Both head.
1845, July 3,.....	Boy and Girl.	Do. Do.
1847, April 10,.....	Boy and Girl.	Do. 1st, foot; 2d, head.
1849, July 26,.....	Boy.	Do. Head.
1851, Jan. 24,.....	Girl and Girl.	Do. 1st, head; 2d, foot.
1852, May 7,.....	Girl and Girl.	Do. 1st, breech; 2d, foot.
1853, Aug. 2,.....	Girl.	Do. Head.
1854, Aug. 17,.....	Boy and Boy.	Do. Both head.
1855, Nov. 17,.....	Boy.	Do. Head.
And miscarried a Boy in April.		
1857, April 6,.....	Boy and Girl.	Do. 1st, foot; 2d, head.

"All at full time born alive. Some died within twelve months, some in a few years; and there are several alive and strong."

Several of the members mentioned that they knew of some analogous cases.

¹ Within six months after the last.

IV. RETAINED PLACENTA AFTER ABORTION.

A discussion then ensued as to the best means to be adopted in cases of retained placenta after abortion.

Dr Keiller said that the plan he almost invariably adopted in these cases was to place the woman on her back, and pressing the uterus well down with the one hand placed on the abdomen, to introduce a finger or fingers of the other into the womb. By firmly pressing upon the abdomen in this way he found that he could fix the uterus, and at the same time push it far enough down so as to bring the placenta within the reach of the finger of the introduced hand, and readily extract the placenta before leaving the patient.

Dr Pattison said that sponge tents were of great use in these cases.

Dr A. Simpson agreed with *Dr Keiller*, and thought that sponge tents were valuable in those cases where the placenta had been retained a day or two.

Dr M'Gowan had some time ago, at Duddingston, a case of retained placenta at the fifth month; on examination, the cervix was contracted and would not admit the finger. He (*Dr M'G.*), after consulting with another practitioner, left the case to nature, and, as far as he knew, the placenta was never discharged.

Dr Keiller said that *Dr M'Gowan's* case reminded him of some cases which had been reported, where the placenta was stated to have been absorbed and ejected, in some cases by vomiting, in others by expectoration. He (*Dr K.*) had seen cases where half of the placenta was retained without causing any subsequent inconvenience.

SESSION XXI.—MEETING VI.

January 29, 1862.—*Dr PATTISON*, President, in the Chair.

I. INFANTILE LEUCORRHOEA.

Dr Keiller made some observations on infantile leucorrhœa. He (*Dr Keiller*) remarked that this was a somewhat obscure affection, and he had had it lately brought forcibly under his notice, in consequence of a gentleman having been accused of polluting a child. He (*Dr K.*) was asked if he could tell the difference between leucorrhœa and gonorrhœa. It was impossible to tell with certainty whether the discharge was specific or not. The difficulty consisted in there being no characteristic microscopic appearances, the corpuscles being the same both in leucorrhœa and gonorrhœa. It was of great importance, however, both in common and medico-legal practice, to endeavour to distinguish between these two diseases. In the present state of our knowledge, one could not be too cautious in giving an opinion on the nature of discharges from the female genital organs. In the case alluded to above, a medical man had committed himself by giving a decided opinion as to the specific character of the discharge, and in consequence of that opinion the case was about to be brought into a court of law. Leucorrhœal discharges occurred at all ages and both in strumous and healthy children, and it was a mistake to suppose that struma was the invariable cause of them. Sometimes dentition gave rise to leucorrhœa, at others neglect of cleanliness appeared to be the cause. Sometimes it occurred in the better classes, but, owing to greater attention being paid to cleanliness, the disease did not assume so aggravated a character as in the poorer classes. These cases sometimes appeared in an epidemic form. At one time he (*Dr K.*) had seen five cases in succession. In all of these five cases the most unfounded suspicions were entertained, and in two of them criminal accusations were actually lodged. With regard to the symptoms of leucorrhœa and gonorrhœa, the discharge of leucorrhœa was more external, not vaginal, as in adults, and the secretion was more watery and adherent than that of gonorrhœa. The parts were not much inflamed nor very tender, they were all moist, and the secretion became incrustated on the adjoining thighs. The child complained of itchiness, but there was no inflammation of the urethra, nor scalding, and the hymen was uninjured, which was a most important circumstance in suspected cases. It had been said that the discharge of leucorrhœa was contagious. In Dublin, *Mr Wild*, who was of

opinion that leucorrhœa was contagious, once got off a man who was accused of having illicit intercourse with a girl, by giving evidence to that effect. He (Wild) further mentioned a case where the mother was infected by her child, and in her turn communicated it to the father.

With regard to treatment, the disease was usually tedious. Cleanliness was the most important point to be attended to. Alum washes, and, in cases from ascarides, lime-water into the rectum, tonics, and good nourishment were also indicated. Sometimes the disease continued many months, and was more difficult to cure than gonorrhœa.

Dr Pattison said he had seen a case of leucorrhœa where the discharge was very thick. *Dr P.* was in the habit of giving rhubarb and soda internally, and, after washing the parts with lime water, of using alum wash.

Dr Cochrane had seen a great number of cases of leucorrhœa caused by the presence of ascarides. Has occasionally had cases where impure intercourse was assigned as the cause, but which in this opinion was unfounded.

Dr Ritchie had twice seen cases where more than one member of a family was affected. A girl, æt. 8, was the subject of leucorrhœa, and while under treatment, her sister, æt. 5, and with whom she lay, also became affected with the same complaint.

Dr Peter Young mentioned a case in which the husband became affected with an apparent gonorrhœal discharge, while his wife was suffering from leucorrhœa.

Dr Pattison had seen several cases of the same kind. In one case where a gentleman soon after being married had a purulent discharge from the urethra, and in consequence entertained doubts of his wife's chastity. On inquiry, however, *Dr Pattison* found that the husband had once had a gleet, and he (*Dr P.*) referred the cause of the discharge to the previous gleet.

Dr Keiller remarked that apparently some men only became affected with urethral discharges caused by their wives being afflicted with leucorrhœa. The reason of this was that probably some cases of leucorrhœa were more virulent than others, as well as that some men were more liable to become affected than others.

II. INTRA-UTERINE CONVULSIONS.

The Secretary read the following communication from *Dr McLeod* of Kilmarnock:—"Mrs D., æt. 33, a stout-made healthy woman, was taken in labour for the fourth time, on the 15th February 1861, about 10 A.M. When I saw her on the afternoon of that day, I was told she had been four hours ill, and that the pains were coming on so quick that she expected the child would be born before I could reach her house. On examination per vaginam, I found the os uteri fully dilated; the head presenting in the first position, and resting on the perinæum. Severe pressing pains came on every ten minutes, having little or no effect in protruding the head through the maternal parts. Her previous labours were natural and easy. I may here mention that I attended Mrs D. during her three previous confinements, and on one of these occasions she gave birth to twins. They are all living and healthy. As I could not account for the cause of delay, I introduced my finger as far as I could all round the head of the child, but could not find any obstacle to its passage. After waiting for about an hour and a half, a severe pain expelled the head, and it now became evident, from the bent position of the right arm, that it was the cause of protracting the labour.

"The child (a male) when born was of the usual size, and at the full time. It was so rigidly contracted in all its limbs that the operation of washing could with difficulty be performed; indeed it was impossible, by the application of any reasonable force, to extend either the arms or legs. The hands were clenched, with the thumbs turned in upon the palms. It was never able either to swallow or suck from the locked condition of the jaws. When stirred or moved in any way the whole body became spasmodically contracted and bent backwards. It took fits regularly every hour or oftener, but more particularly when touched.

It never cried, but whined more or less up till the time of its death, which took place during a fit on the Sunday week following its birth, at 10 o'clock at night. The bowels were moved several times; but little or no urine was passed after the first day. I regret not having had an opportunity of inspecting the body after death, which was prevented by my having more pressing duties to attend to at the time.

"The mother felt certain from the sudden and violent movements of the child, for about six weeks previous to birth, that there was something unusually wrong. She described these movements to be so painful at times as almost to make her cry out. They continued generally for about an hour, when they gradually subsided, recurring frequently during both day and night.

"The only treatment followed was putting the child occasionally in a warm bath; rubbing in a liniment composed of chloroform and camphorated oil along the spine. An effort was made to support its strength by nutritive enemata, but every attempt failed by bringing on a paroxysm of convulsion."

III. DOUBLE MONSTROSITY.

Dr Alex. Simpson (in the absence of Professor Simpson) showed a double monster, which one of his students had undertaken to dissect and describe.

SESSION XXI.—MEETING VII.

February 26, 1862.—*Dr PATTISON, President*, in the Chair.

I. RETROVERSION OF PREGNANT UTERUS.

Dr Bruce read the following description of a case of retroversion of the uterus:—"On the 24th March last, I was sent for to see Mrs G., and on visiting her I found her condition to be as follows:—She is an unhealthy woman; one arm is almost useless: pieces of bone have come out of it, and others will probably follow. She has an anxious expression of countenance, and complains of frequent efforts to bear down, and of difficult micturition. She had been troubled with prolapsus uteri for some time before, which condition disappeared, and then the above symptoms supervened. These had existed for several days before I saw her, and she had sent for a midwife, thinking she was about to miscarry. She thought she was pregnant, not having menstruated for three months previously. Her abdomen was very much enlarged, as much so as at a considerably advanced period of pregnancy. General treatment was had recourse to for a time, but with only partial and temporary benefit.

"On making a vaginal examination then, I failed to discover the os uteri, and could only feel a tumour of considerable size, supposed to be the uterus much enlarged. No improvement taking place, on the contrary, the patient becoming worse, and the bearing down more severe, I made a further examination, and, on pressing up as far as possible to try and reach the os, a gush of liquid came away, and the patient expressed herself at once as being much relieved, while there was a corresponding reduction in the size of the abdomen—the walls of which were previously quite tense becoming much more yielding. This amelioration, however, did not continue long, as next day matters were much the same as before, the fluid having re-accumulated.

"On repeating the examination, and pressing upwards as before, more fluid came away just as on the former occasion, and with the same effect of affording relief to her symptoms; but, as at the former examination, I was unable to touch the os uteri. The fluid continued to flow in large quantities, rendering the patient very uncomfortable. The urine was drawn off several times, but there was no great accumulation of it.

"At this period of the case *Dr Keiller* saw the patient along with me, and was equally unsuccessful in reaching the os. He agreed with me in thinking that the uterus must be retroverted, and recommended that the patient should be removed to the Infirmary, when he would give chloroform and introduce the hand into the vagina, so as to make a thorough examination, and remedy the

condition if possible. I may state that every attempt at examination brought on very severe bearing-down efforts. After taking some time to consider, she made up her mind to go to the Infirmary, and on the 22d April she placed herself under Dr Keiller's care. She was then brought under the influence of chloroform, and Dr Keiller having introduced his hand well in, was enabled to feel the os tilted high up, and now the excessive bearing-down was well seen, the uterus being forced down in a very extraordinary manner, and pressing strongly upon the perinaeum, just like the child's head during the strong expulsive pains before delivery; it could be compared to nothing else. Dr Keiller, now by manipulating (drawing down the os with his thumb, and pushing up the body of the uterus with his fingers), was successful in replacing the organ in its normal position, the mass going up with a jerk, immediately upon which the tumour disappeared, and the os was found to occupy its proper place. A little blood came away during the operation. Next day the patient expressed herself as being greatly relieved, the bearing-down pains having entirely ceased, and her countenance betokening how much easier she was. The existence of pregnancy was not decidedly made out, for if she had been in this condition we would have expected labour to be induced by the treatment she was subjected to, particularly after the escape of the liquor amnii, but nothing of the kind occurred. She remained in the Infirmary for some time subsequently, being very weak, and some small portions of bone were removed from the arm; but before she left the sounds of the foetal heart were distinctly made out. In the month of August I saw this patient going about comparatively well, and expecting her confinement in a month or two. I afterwards ascertained that she was delivered on the 25th September of a living and healthy-looking child, and made a very good recovery."

Dr Keiller remarked that he had never observed a case where the uterus was retroverted to so great a degree. He had never seen the pregnant uterus subjected to so much mechanical violence without abortion ensuing. He (Dr K.) regretted that he did not in this case apply the stethoscope, per vaginam, to ascertain whether any bruit might be heard. He (Dr K.) had some time ago brought under the notice of the Society a stethoscope he had invented for diagnosing early pregnancy, and the nature of uterine and other pelvic tumours, and at that time mentioned the case of a woman from Annfield. The uterus was retroverted as in the above, but not to so great a degree. On placing the stethoscope into the vagina, a distinct bruit was heard at the side, which indicated that the woman was pregnant. It is usually not until an advanced period that a bruit can be heard at the *fundus* of the uterus in pregnancy. He (Dr K.) placed the patient on her knees and elbows, and pushed the uterus up into its natural position, when the woman was able to walk home without any inconvenience.

Dr A. Simpson observed that he had once seen a similar case. He was called to see the patient on account of her inability to make water. On examination, he found that the uterus was retroverted and pregnant. The uterus was replaced, and the woman went on to the full time.

Dr Pattison said that Dr Thatcher had seen a case where the liquor amnii came away a month before delivery.

II. LACERATIONS OF THE UTERUS.

Dr Figg made some observations on lacerations of the uterus—their consequences and treatment. He (Dr F.) remembered that when he first came to Scotland he was surprised to hear Dr Simpson advocate dilatation of the os uteri with the fingers, and mention that in Germany some practitioners were in the habit of making incisions into the os, so as to accelerate its dilatation. Since these facts became known to him, he (Dr Figg) had recourse to dilatation with the finger in every case, and not only so, but introduced his whole hand into the uterus as soon as the os was the size of a crown piece, turned and extracted the child. At first he (Dr Figg) thought that he simply dilated the os with the finger, but in one case, which soon occurred, a considerable laceration took

place, which alarmed him considerably as to the result. After the patient was delivered, he made an examination to ascertain the extent of the injury, and found that he could introduce two fingers into the laceration. He watched her with anxiety, and to his astonishment she was out of bed on the fourth day. He thought inflammation would supervene, as the patient had a rigor on the sixth day; but in this he was mistaken, for the rigor passed off and she got quite well. Thirteen weeks after delivery, he (Dr F.) found barely a notch in the situation of the laceration.

Afterwards he (Dr F.) made frequent examinations in other cases, and found that laceration of the os to a greater or less extent always took place.

About a fortnight ago he had a case where the os was the size of a florin. He administered chloroform, introduced his hand into the uterus, lacerating the cervix considerably, then turned and extracted the child. The patient did well.

Rupture of the fundus was always followed by fatal consequences, because it extended through the peritoneum, and the waters escaping into the abdomen, gave rise to inflammation.

Some of his (Dr F.'s) patients had complained of pain in the left side, but this was easily removed by turpentine stupes or leeches.

Dr Ramsbotham reprobated the practice of dilating the os uteri, yet he was in the habit of doing it himself. About seventeen years ago, he (Dr F.) had a patient in South Gray's Close. The patient was a healthy robust woman. The os was about the size of a shilling, and there was hæmorrhage with every pain. No bruit of any kind could be heard on auscultation. The woman gradually became faint, but as Dr Simpson was not at home the case was allowed to go on. On the following day the woman expired. He (Dr F.) believed that he lost that woman's life by following the advice of Ramsbotham and Conquest, not to dilate or introduce the hand into the uterus. On making a post-mortem examination, the placenta was found partially separated.

Dr Cochrane thought that few would recommend Dr Figg's plan. He did not think the Creator's designs should be so outrageously dealt with. If we looked at any of the savage tribes, we would find that nature did her work well without any such violent interference.

Dr Keiller said that practitioners were often perhaps too timid in interfering with the uterus. He (Dr K.) would not interfere so soon in first cases as Dr Figg; yet much could be done by dilatation with the fingers. By giving chloroform and then introducing the whole hand cautiously into the uterus, and gradually dilating the os from above downwards, the labour was often greatly expedited. The danger of lacerating the cervix was not great. Sometimes the cervix was almost torn off without bad consequences. The most dangerous part for laceration of the cervix to happen was behind, where the peritoneum dips down. In rupture of the fundus, death usually took place in twenty-four to forty-eight hours, from peritonitis.

Dr Figg had seen three cases of laceration of the body of the uterus, in all of which death occurred in half an hour.

Dr Cochrane saw a case of rupture of the body of the uterus, where the woman lived three days. The foetus could be easily felt through the abdomen, and after it was extracted the bowels protruded.

Dr Moir remarked that it depended whether some of the large vessels were ruptured whether the patient lived for a longer or shorter time.

Dr Pridie had a case at Echo Bank, where there was a prominence on the left side of the sacrum, and the uterus was lacerated in consequence. The patient sat up and went about for three weeks, but at last succumbed at the end of the sixth week.

Dr A. Simpson was in the habit, in some instances, of dilating the os with the finger, but did not think it was right to interfere in the way recommended by Dr Figg in ordinary cases.

Dr Moir said that Dr Figg's method would perhaps be advisable in cases of unavoidable or accidental hæmorrhage.

SESSION XXI.—MEETING VIII.

March 19, 1862.—Dr PATTISON, *President*, in the Chair.

I. PUERPERAL PULMONARY EMBOLISM.

The Secretary read a communication on a case of puerperal pulmonary embolism (with preparation), by *Dr Cowan*, Melrose:—"J. B., æt. 22, a primipara was delivered, on the 12th August 1861, of a daughter, after an easy labour which lasted two hours. She made a good recovery, and was moving about her room on the 17th, five days after her confinement.

"On the 19th I was requested to visit her, and found her again in bed suffering from a slight bilious attack, which she attributed to having eaten some bacon on the previous day. This attack yielded to the ordinary treatment, and on the 23d I took my leave, as she was convalescent. On the 30th an urgent message was sent for me to visit her immediately. I was in the country at the time, but my brother, Dr William Cowan, instantly repaired to her house and found her dead.

"Her friends informed my brother that she had been sitting by the fireside for some time, and feeling fatigued she said she would go to bed. On endeavouring to get into bed she uttered a smothered cry and fell to the ground; after which she neither spoke nor moved.

"It would be about half an hour after death when my brother saw the body, and at that time it presented the following appearances:—The face was purple in hue, the mouth was drawn to one side and surrounded with frothy mucus, the eyes were open, and the pupils widely dilated. The muscular system was in a state of rigidity, and the hands were firmly clenched. He supposed she had died in a convulsion.

"Death having occurred so suddenly, the case was reported to the procurator-fiscal, who sent me an order to examine the body. On the 31st I accordingly went to the house, accompanied by my brother, for the purpose of making a post-mortem examination; but we found the people up in arms at the prospect, and it required the presence of a sergeant of police to prevent them laying violent hands upon us during the operation. The examination consequently was not so satisfactory as it ought to have been; but I will now give an account of it, however imperfect it may be.

"*Post-mortem Examination.*—The body was well formed, and was covered with a layer of fat about three quarters of an inch in thickness, and the rigor mortis was complete. On opening the head the brain was found to be well developed, but greatly congested, and in some of the veins globules of air were seen in great abundance. Otherwise it was healthy; no fluid being found in the ventricles. The glottis was not contracted; the trachea was filled with mucus; the heart was quite healthy, the left side was empty and firmly contracted, the right greatly distended with fluid blood. The pericardium contained about three ounces of serum. The lungs were both highly congested, and on removing the left one a fibrinous clot, about an inch and three quarters in length, was found in the pulmonary artery, extending into its left branch. The clot acted like a plug or cork, completely occupying the calibre of the vessel, and required to be removed with the fingers. The abdominal organs were all healthy. On looking at the preparation we need not be surprised at the suddenness of the death, considering that the pulmonary arteries were so thoroughly obstructed.

"As this is the first case of the kind I have met with, it is not my intention to make any remarks upon it; but, as it possesses some very interesting features, I have brought it before the notice of the Society for the purpose of provoking discussion."

Dr A. Simpson remarked that this was a very perfect specimen of embolism. Frequently, in pregnant women, a clot was formed in the pelvic veins, owing to the slow circulation, and carried into the pulmonary circulation, where, being arrested, it soon increased to such a degree as to stop the circulation. In this

case, however, it was impossible to say where the clot originally came from, as the report of the sectio gave no data for determining the point.

Dr Peter Young mentioned the case of a lady who was affected with Bright's disease and hydro-thorax. For some days before death the pulse was remarkably slow and the breathing impeded. One day, when lying quiet in bed, she suddenly started up and fell back dead. On making a post-mortem examination, in addition to granular degeneration of the kidneys and effusion of serum into the left pleural cavity, a large clot was found extending from the right auricle into the pulmonary artery. The clot was firmly adherent in part of its extent, and had evidently been formed during life.

Dr Keiller said that he had seen sudden deaths more than once from plugging of the pulmonary artery. A fortnight ago, a woman, a patient of his in the Maternity Hospital, had an attack of bronchitis ten days after her confinement, and died suddenly. The case looked like one of pulmonary embolism, but, on examination, no coagula could be found. The lungs were simply œdematous. He (*Dr K.*) had seen a lady last Thursday who died suddenly, in all probability from the formation of a clot in some artery. The patient was about forty years of age, and menstruating. She had risen early in the morning and taken a foot-bath; she then felt unwell, and fell suddenly on her knees. She was put to bed, and was immediately seized with an epileptic fit. When *Dr K.* saw her she was sitting up in bed and foaming at the mouth. She was not wholly unconscious. The respiration and pulse were slow and the arms rigid. At length the respiration ceased, the heart's action became rapid and then stopped.

II. INVERSION OF THE UTERUS.

The Secretary read a communication on a case of inversion of the uterus, by *Dr Cowan*, Melrose, reported in this Journal for June 1862.

III. DOUBLE MONSTROSITY.

Dr A. Simpson (in absence of Professor Simpson) showed a specimen of a double monster, and read the following by *Dr Duff* of Elgin:—"I sent you by yesterday's luggage train a specimen of a not very common species of monstrosity, a foetus with two heads, perfect as to heads and necks, four arms (three perfect and one imperfect), body common, being joined from the sternum, and wanting the lower part of the body from the pelvis. On one side of the body two imperfectly developed legs, one much more imperfect than the other. On the other side of the body, the part from which the lower limbs should have sprung was occupied by adherent placenta. There was only one placenta and one cord. The cord was about six inches long. As I wished to send the specimen to you I did not examine whether the internal organs were single or double, or whether there was anything unusual about them.

"The woman from whom this foetus was taken is about 25 years of age, strong and healthy. She has other children who are strong and healthy. At the period of the birth of this foetus she believed herself about seven and a half months pregnant, and during this pregnancy she never felt anything unusual, and she said she felt movement up to the time she was taken ill.

"The placenta was attached to the neck of the uterus anteriorly, and overlapped the anterior lip of the uterus, and there was some hæmorrhage, although not to an alarming extent, during labour.

"The labour went on naturally. The heads, which at the commencement were in apposition, gradually separated, the smaller one descended into the hollow of the sacrum, while the other remained high up in fundus of the uterus, stretching across like an hour-glass."

IV. CONGENITAL MELANOTIC TUMOUR.

Dr Alexander R. Simpson showed a preparation of a melanotic tumour from the shoulder of an infant, which had died a few days previously. The child had been very fretful for the first day after birth, crying whenever it was moved. When dressing it the following morning the nurse observed a swelling

on the shoulder. It had a diameter of about an inch and a half, was flattened on the surface, and slightly depressed in the centre where it was firmest, and was very tender to touch. The application of a plaster round the arm kept it protected, and the infant became quiet. No change occurred in the tumour. The child, though weak and puny, seemed to be doing well enough till it was a fortnight old, when it became affected with sclerema, specially of the head and face, which rendered all the features rigid, so that it had not been able to suck for many hours before death. On examination the tumour was found to be of a melanotic type, and was developed from the deeper surface of the true skin. The father, an old man, was affected with constitutional syphilis; the mother was healthy.

SESSION XXI.—MEETING IX.

April 23, 1862.—Dr PATTISON, *President*, in the Chair.

I. CASE OF MALFORMATION OF THE BOWEL, LEADING TO PERFORATION IN UTERO.

Dr Stephenson showed a preparation of congenital malformation with perforation of the cœcum, and gave the following history of the case:—"In May of last year (1861) I was called to attend Mrs C. in her fourth confinement. The labour was slightly tedious, owing to the weakness of the pains, and the posterior lip of the cervix becoming stretched on the head of the child, and held there. It was readily discovered, however, and rectified, and the labour went rapidly on, till after the expulsion of the head. Several pains having passed without any advance, I introduced my finger into the axilla and employed traction. To my surprise, however, I found much greater effort was required than under ordinary circumstances. Nor was it till after the use of considerable force that the body of the child was drawn into the world.

"The cause of the difficulty was now evident in the greatly distended condition of the abdomen. The child was dead, and the cuticle removed from a large surface of the body. The placenta was shortly after expelled, and appeared perfectly natural and healthy. The mother made a good recovery.

"Permission having been obtained I examined the body along with my friend Dr Gooding. The child, a male, was of good size, and well developed externally. The scrotum was large and filled with fluid. On opening the abdomen it was found filled with a large quantity of dark-reddish, brown fluid. No lymph, however, could be observed on the intestines, but these were considerably injected. Prominent to view was a large fold of the intestine, filled with meconium. This at first sight was taken to be the large intestine, but, on more careful examination, turned out to be but the ileum and jejunum. The colon was found small and empty. On tracing it back to the cœcum we discovered a portion of the meconium projecting through an opening in that part of the canal, and on carefully removing the bowel the following condition was found:—The small intestine largely dilated and filled with meconium; the mucous membrane of the cœcum highly injected, the inner coats thinned and eaten away, and a small perforation through the peritoneal coat; the large intestine, throughout its whole length, narrow and empty; contracted in its middle third to the size of a crowquill, but open throughout. The anus was also perforate. Various malformations of the intestines have been recorded; but, so far as I can discover, nowhere has ulceration and perforation been found as the result. In this case it has evidently been caused by the over-distension of the bowel from accumulation of the meconium, it having been unable to make its way into the narrow and contracted colon. The malformation seems to have been caused solely by an arrest of development, and not the result of any previous inflammatory action, as no adhesions were discovered.

"In the London Obstetrical Transactions for 1859, Mr R. Druitt has recorded a case of similar contraction, affecting a portion of the ileum as well as large intestine; but in this case he attributes it to an inflammatory tying of the

bowel, the ends becoming separated, and healing 'in a manner precisely similar to the behaviour of an artery when tied.'

"Similar divisions of the bowel have been recorded by French writers (Billard, *Maladies des Enfants*, p. 205; Schæfer, *Journal Complément du Dict. des Sciences Med.*, t. 24, p. 58), as well as absence, in some cases of the small, in others of the large intestine."

II. PAINLESS PARTURITION.

Dr George Smith of Madras communicated the following history:—"Some years ago I was engaged to attend an English lady during her approaching confinement, and was startled one day by a hasty summons, coupled with the information that the child had been suddenly born without warning of any kind. On reaching my patient's residence I found that the child had been born about ten minutes, and that it was still lying, with the umbilical cord uncut, close to the mother's body. The native female servant, at the lady's order, had left the child untouched, merely raising the bedclothes a little to permit the free access of air for the purpose of respiration.

"On inquiry, the lady informed me that she had been for some time expecting her confinement daily; that the previous night she had felt as usual; but that she had had occasion to rise frequently to attend upon her sick child, and that she had got up as usual about half past five A.M., feeling well, and having no indication of the near approach of labour. Further, that during the forenoon she had walked down a long flight of steps, and across a gravelled walk to a smaller house within the enclosure of her own grounds, where, feeling a little tired, she had lain down upon a bed—that soon after she experienced slight discomfort, likened by her to ill-defined uneasiness of the abdomen under the operation of a mild laxative, followed by an impression that some solid warm body was lying in contact with her person—that she directed her servant to look below the bedclothes, and that the attendant, on doing so, found to her surprise the child entirely extruded.

"My patient assured me repeatedly and earnestly that she was quite unconscious of the whole parturient process culminating in the birth of the child, and expressed herself both surprised and alarmed at a delivery so painless and instantaneous. As she was daily, nay hourly, expecting her delivery, it is but reasonable to suppose that she had been for some time acutely alive to the earliest intimations of commencing parturition, and it is surely remarkable that nothing occurred from which she could have suspected that the act had actually commenced. My patient had no object in deceiving me, and I am quite satisfied of the entire truthfulness of her often—to me—repeated statement.

"This case has a medico-legal significance, as well as a practical. If a female awake, in perfect health, in the exercise of sound reason, and hourly expecting her confinement, having no object for its concealment, but many reasons for its occurrence, being welcomed by her friends, can be the subject of painless unconscious labour, preceded by no appreciable premonitory symptoms, and making itself known only when the extrusion of the child has been completed in the way described, how much more may we be inclined to yield belief to cases in which it has been averred that delivery has taken place during sleep, without waking the mother, and to others, in which it has been maintained that owing to the painlessness of the parturient process, the child's life has been lost by a fall on the ground, or by being engulfed in a latrine? The child was a female, small, but not much undersized. The mother's first labour—this was the second—was a normal one, accompanied by the usual signs, and extending over six hours in its duration.

Dr Pattison stated that he had once attended a primiparous patient who suffered no pain at all during labour. He had not been summoned to the case, but happened to call at the time; the child was born quite easily, the patient only experiencing a feeling of pressure.

Dr Wilson had once been called to see a woman who had been delivered

without any pain, whilst she was walking about in the house; and he found the child lying on the floor with the umbilical cord torn across.

Dr Cochrane thought that such a case as that related by *Dr Smith* might more readily occur in a warm country with a relaxing climate. But he had himself seen a woman who had just been delivered of a child almost unconsciously as she was getting out of bed.

Dr Andrew Balfour stated that he had attended, when in China, the wife of an engineer on board a steamer, who suffered from remittent fever in the eighth month of her pregnancy. The whole ovum in that case was expelled entire without any warming; and when he (*Dr B.*) arrived and ruptured the sac, the fetus was already dead.

Dr Pattison said *Dr Thatcher* used to tell his class of a case where he found the patient had been delivered of an entire ovum with unruptured membranes. *Dr T.* had been summoned by the husband, who was in great dismay, because, as he averred, his wife had given birth to a "leg of mutton."

Dr Gordon thought the medico-legal aspects of such cases of great interest and importance.

Dr Alex. R. Simpson stated that *Von Ritgen*, the venerable professor of midwifery at Giessen, had told him, that in the long course of his practice he had met with no less than seventeen cases of labour where the patient had experienced none of the ordinary labour pains; and he (*Professor von Ritgen*) had been led to form the conclusion that in perfectly natural labour, pain should not necessarily be experienced, and that we had come to regard pain as a natural and necessary concomitant of labour, merely because women were almost never in a perfectly healthy condition when we were summoned to aid them during parturition. He (*Dr A. R. S.*) thought that if *Professor von Ritgen's* position could be established—and the facility of parturition among savages went far to prove its truth—then the objection sometimes made to the use of chloroform in labour, on the ground of its being contrary to nature, would be most completely done away with.

III. HYDATIDS OF THE OMENTUM SUCCESSFULLY REMOVED.

Dr Alex. R. Simpson showed a preparation of a hydatid mass that had been sent to his uncle by *Dr West* of Birmingham. The patient from whom it was taken had been supposed to be labouring under ovarian dropsy; but on making a small incision through the abdominal wall, the case was found to be one of omental hydatids. These were removed along with a small piece of the omentum; the wound was closed, and the patient made a good recovery.

IV. PARALYSIS AFTER PARTURITION.

Dr Pattison stated that he had at present under his care a young woman who had suddenly lost the power of her left arm two days after her confinement. The sensation was not impaired, but the loss of motion was complete, and the power only began to be restored three weeks afterwards, under the use of friction.

Dr James A. Sidey had seen a man who had got palsy of the arm from lying on it; and in that case many measures had been tried in vain. But at last the power of the limb was recalled by the use of galvanism.

Dr Gillespie stated that he had had a patient whose arm had been rendered powerless for a time, in consequence of excessive straining with it during labour. He sometimes saw cases of palsy of the muscles of the forearm in washer-women, resulting from over-exertion. The paralysis in some instances continued during several weeks, and required the use of blisters to effect a cure.

Dr Milburn saw lately a gentleman with palsy of the right arm, which came on suddenly about twelve months ago, and had never been in any degree relieved, although many different measures had been adopted.

DR RENNIE'S THEORY OF SMALL-POX.

(From a Correspondent.)

IN looking over one of the public prints we noticed an article entitled, "Dr Rennie's new remedy for Small-pox," consisting of extracts from a report by D. F. Rennie, M.D., surgeon, 31st Regiment. It is not our custom to take notice of any medical observations which may first see the light in a non-professional journal: as a rule they may be with perfect safety left to the premature fate which awaits them. The present communication seems to us, however, to require some measure of consideration, partly from the professional standing of the author, and partly from its being to a certain extent issued under the patronage of the General commanding in China.

We may begin by saying, that it has never been our misfortune to meet with a paper by a qualified medical man, written in a more careless and ungrammatical manner. Let us take, for example, the following sentence, which is one picked at random out of many:—"I feel certain that the blood disease (should any have existed) has determined to the skin, and its dregs removed from the circulation." Is such a sentence worthy of a graduate of a university?

But perhaps Dr Rennie thinks that science goes before style, and that, like Sigismund, his greatness makes him *super grammaticam*. Let us see, then, what his facts are like. These are, shortly, as follows:—While stationed in Pekin he met with three cases of true small-pox. Of these one appeared in a person who had had a previous attack, and was immediately preceded by two days of what Dr Rennie calls "common ague;" the second in a man who had been vaccinated; and the third in another man who had indigestion, with slight fever, ending in confluent small-pox. After the eruption had fairly appeared in these cases, Dr R. applied an ointment of tartar emetic to the chest of each patient, with the effect of producing a large crop of pustules. In the first and third case there was no secondary fever, and the patients recovered rapidly; what became of the second case we are not told.

Two cases of febricula occurred at the same time, and recovered after the application of tartar emetic ointment to the chest. Dr Rennie observed several cases at Tientsin, of which he gives us no particulars, but in which he says that his treatment was successful. He also tells us that in a certain case, in which he found it necessary to apply the tartar emetic ointment with his own hands, he felt a tingling sensation in his fingers. Lastly, he states that during the winter 1860-61, not a single case of small-pox occurred in his regiment.

Such are the facts; let us now see the theory drawn from them. We must give it in our own words: Dr Rennie's confusion and long-windedness might be too much for the patience of our readers. He believes that tartar emetic ointment produces an electric current *on the surface* of the skin; that in small-pox "there is present in the blood a material capable of being converted under certain circumstances into purulent matter," and that by electro-chemical decomposition, caused by the tartar emetic, this material is precipitated on the skin. He also believes that if this *materies morbi* did not appear as small-pox, it might do so as dysentery, hepatic abscess, or any other local suppuration.

We think it scarcely requires serious criticism to show that Dr Rennie's facts are worthless, and his theory preposterous. There are but three cases of small-pox given. In one of these the sex is not stated; in none is the age, constitution, temperament, or race given; and in one we are not even told whether the patient recovered or died. There is no account of the duration of the different stages of the disease, nor have we any description of the conditions under which the cases were conducted. We need not say that there is no attempt at a critical elimination of any *juvantia*, to which a favourable result may have been referable.

Then, what does he mean by *common ague*? Is there an *uncommon ague*? Was Dr R.'s case quotidian or tertian, or to what class did it belong? His

other facts are so manifestly valueless, that we need not occupy our space by discussing them.

Extraordinary, however, as are the facts (from a scientific point of view), the theory founded on them is still more wonderful. Who ever heard of an electric current *on a single surface* like that of the skin? Where are the two substances of opposing electricity? Where are the wires or conducting media? What possible relation can the supposed case have to any electric arrangement with which we are acquainted? We are sorry to meet with such stuff in the days of Du Bois Reymond and Pflüger. But, in small-pox, the blood contains "a material capable of being converted under certain circumstances into purulent matter." Why does he not say pus? Does purulent "matter" possess a more scientific appearance? Apart from this, will Dr Rennie venture to assert that the blood is *ever* destitute of materials which are capable under certain circumstances of being converted into pus? How can he reconcile such a notion with any modern ideas on suppuration?

His theory of electro-chemical decomposition of the blood, we need not say, is utterly unsupported by any scientific evidence. He seems to compare a complex fluid like the blood to a simple solution of a metallic salt, and the "purulent matter" to the metal deposited at one electrode. The idea is too absurd to require refutation.

Lastly, his identification of small-pox with dysentery and hepatic abscess has not a single argument in its favour, and is at variance with all the experience of modern times.

We have given only a few of the many absurdities to be met with in Dr Rennie's report. And yet this stuff is recommended by Brigadier-General Staveley to the careful examination of the medical officers of the British Army in China!

CORONERS' INQUESTS.

THE following remarks, by Professor Taylor, on the present system of instituting inquiries into the causes of sudden and violent deaths, have been handed to us for publication:—

1. The coroner's inquisition is known and recognised only in England, Wales, and Ireland. It is an institution of ancient date, having been established about the time of Edward I. The office of coroner was formerly exclusively held by persons of education and high social position.

2. Coroners were (and are) required by the old statute to extend their inquiries into the causes of death of persons. The 4th Edward I., stat. 2, on which they now act, directs that "upon information," they shall "go to the place where any be slain or suddenly dead," and make due inquiry as to the cause, etc., before a jury selected from persons living in the neighbourhood.

3. The information upon which a coroner now acts, as far as I can ascertain, is,—i. Notice from a beadle, or other officer of the parish (whose zeal is sometimes stimulated by a fee or salary) of any death from sudden or supposed unusual causes. ii. Notice from a medical man who may have attended the deceased, and who communicates his suspicion that the cause of death is not natural. iii. Notice from a registrar of deaths that no cause has been assigned in a particular case, or that there has been a rapid death after a short illness.

4. In the remarks I am about to make, I hope it will be understood that I wish to cast no censure on coroners as a body. I have been engaged in the practice of medical jurisprudence since 1831, and during the 31 years that have passed I have been brought into contact with coroners of every county in England, excepting Cornwall; and with the greater number of the borough coroners of the principal towns and cities of England. In this practice I have had an opportunity of fully observing and noting the course of proceeding in some hundreds of inquiries, involving cases of violent death from poisoning, wounding, drowning, etc.

5. My conclusion is that the system at present pursued is radically and essentially defective:—i. It affords no certainty for the detection of crime; ii. It affords no protection to those who are wrongly charged with crime; iii. It, in some cases, screens a criminal by a verdict based upon an imperfect inquiry, in which the important medical facts, upon which a proper verdict should be based, are either not understood or misinterpreted by coroner or jury.

6. Admitting that some crimes (which might have remained concealed) have been brought to light by this system, it is my decided opinion that, as the inquiry is now conducted, it exercises no deterring influence on criminals (poisoners); and it has fallen into such contempt with our judges, that at the assizes, unless a true bill has been found by a grand jury, or the alleged criminal has been committed by a magistrate, no prosecution is instituted on the proceedings before the coroner. They are generally incomplete or informal.

7. In a large per-centage of cases, I cannot say how many, no inspection of the dead body is made. (This is probably in order to avoid the expense of a post-mortem examination.) I could point to cases in which death by poison has been thus concealed, and the fact has only come to light by accident some time afterwards. With very rare exceptions, indeed, is it justifiable on the part of a coroner to hold an inquiry on a dead body without a strict external and internal examination of such body. Either the inquiry is necessary, or it is not. If not necessary, the coroner is to blame in holding it; if necessary, an inspection of the body is the very essence of the inquiry, where it refers to one who "has been slain or is suddenly dead."

8. I was once an attendant at a funeral; it was delayed, and the cause of the delay was simply this: An inquest had been held on the body (a case of very sudden death in a state of health), and a verdict of death from "disease of the heart" had been returned. There had been no inspection. When the grave-clothes were removed, and the body examined, it was covered with bruises—some of the muscles of the thigh were reduced to a jelly. Death had been caused by violence. An inquiry before a coroner for two days had resulted in a verdict of "Disease of the heart." Within two hours only of the body being put into the ground it was clearly proved to be an act of murder, or manslaughter. The guilty party was tried, convicted, and punished.

This case, with several others of a similar kind, establishes two of the propositions under 5. The coroner's inquest affords no certainty for the detection of crime. It, in some cases, screens a criminal.

9. The secrets of the grave are only known in many of these cases to those who, like myself, practice medical jurisprudence. In the course of the last thirty years, I believe I have not had fewer than from twelve to fifteen cases of the exhumation of dead bodies, on some of which inquests had been held; no inspections were made; verdicts of death from cholera, or natural causes, had been returned, and, at intervals of from one month to twenty-two months, the bodies had been disinterred, and poison found in them sufficient to account for death.

10. All inquests without an inspection of the body are a vain mockery, and the sooner the public mind is imbued with this proposition the better for society. I do not say that the bodies of all persons who die suddenly are to be inspected. If circumstances of a suspicious kind justify an inquest, *ipso facto*, there should be an inspection. If an inspection is not required, an inquest is not required. I, of course, except from these remarks such cases as inquiries into deaths from machinery, railway accidents, etc., where the physical injury is obviously sufficient to account for death without further inspection.

11. The verdicts of coroners' juries are sometimes quite erroneous, and contrary to the medical evidence. Great injury is thus done occasionally to innocent persons. At the assizes a bill may be thrown out by the grand jury; but the person inculpated by the verdict may always have a stigma attached to his character, as a result of mistake or misapprehension of medical evidence, or, sometimes, of local prejudice.

12. Coroners are seldom, either medically or judicially, qualified for their

office. The system of electing a man to hold such an office as this (one demanding medical knowledge of the causes of death, and good legal knowledge of the law of evidence), by freeholders of the lowest degree, is so intrinsically absurd, that it is quite wonderful how, with improved knowledge and civilisation, it has maintained its ground in such a country as England. The election of a Lord Chancellor, of the judges of our courts of law, or of county court judges, might be with equal reason left in the hands of voters of this kind,—men who have no knowledge of the duties of the office, or of the skill and learning required in a man really competent to fill it. The election of a good and capable man is, therefore, a matter of pure accident. No preliminary test of ability or capacity is required.

13. In Scotland there is no coroner, but a skilled advocate¹ is selected as procurator-fiscal, and he, upon information, has it in his power to nominate skilled medical men to make inspections and analysis.

14. The practice in England is to select the nearest medical practitioner, whether he has had experience or not, and often to trust an important chemical inquiry in the hands of one who probably has never before made an analysis.

15. Steps for the proper identity and preservation of viscera, etc., are thus neglected, or left to chance. The stomach is cut open, and the contents entirely lost. The stomach containing poison is thrown into the same vessel with other viscera, and thus all are impregnated with poison. Evidence of absorption and diffusion of poison through the body during life is thus entirely destroyed. Stomachs have been sent to me wrapped only in brown paper. On one occasion two stomachs (of children poisoned) were sent to me in bladders, unlabelled. The identity at the trial could only be made out by the different colour of the string with which one bladder was tied. In a newly-papered room in which a body was examined, the stomach was wrapped in a portion of the paper-hangings lying about, and arsenic was thus transferred to it from the paper.

16. The selection of the nearest chemist, or of any gentleman who will conduct the analysis for the parliamentary fee of £2, 2s., in a real case of murder by poison, generally leads to a large expenditure subsequently for a further analysis before the trial, when the parts in which the poison would be most probably found, have all been destroyed.

17. It is, unfortunately, the custom on such occasions to condemn severely the medical and chemical gentlemen who have probably, for the first time in their lives, had to conduct a case of this serious nature, upon the express order of a coroner, with insufficient remuneration for its performance. This is manifest injustice. The fault is in the system, not in the men, who do their utmost to perform a difficult duty as well as they can, for the first time.

If a coroner places a stomach for analysis in the hands of an inexperienced analyst, it is not the fault of the analyst (whose living depends on his practice) if he undertake it, and falls into some grievous act of omission or commission. The error is with the system, and with the system alone; and the sooner it is abolished, and a more reasonable mode of proceeding substituted, the better.

18. Much more might be said on this subject. In my mind there is a simple remedy, which is often now resorted to by the coroner in great cases demanding medical and scientific skill—in other words, the evidence of experts. After a coroner's inquiry, the whole of the proceedings are directed to be re-heard before a magistrate or magistrates who can properly analyze and sift evidence, and can bring the minds of educated men and trained lawyers to bear on the facts. Proper analyses and inspections are then made, and the case in this complete form goes before an assize court for trial.

19. If this is done occasionally in cases of importance, why not in all cases that are now properly the subjects of a coroner's inquiry? Let a legally trained gentleman be appointed as a stipendiary judge in every county or

¹ Professor Taylor is wrong technically, but not substantially. The procurator-fiscal is generally a solicitor.

borough; let him, upon the same sources of information as are now open to the coroner, hold an inquiry or not, according to his judgment. He should have a proper salary for the office.

20. In each county, borough, or district, there should be appointed, as in some states on the continent, a skilled surgeon—skilled in the inspection of the dead body, and on the causes of death; and a skilled chemist, skilled in the processes for the detection of poisons, etc. To these three officers, and, if necessary, to assistants appointed by, and under them, all inquiries into crimes connected with the death of persons should be exclusively remitted. A salary of £750 to £1000 per annum for skilled surgeon and analyst would secure competent men, and probably turn out in the end to be less costly than the coroners' inquest, as at present conducted. The duties of sanitary officers (which are not heavy) might be shared by the medical and chemical gentlemen appointed to these offices.

21. Some such regulations as these must be made if the public desire to have the duties of an important office properly fulfilled. The value of life is greater in England than in any other country, but this remark applies only to cases of crime which are actually detected, and to the prosecution and punishment of criminals. I believe that we are greatly inferior to other nations in our means for the scientific detection of crime and murder by secret means. In the case of William Palmer (1856), his wife, his wife's mother, two of his children, his brother, and one of his personal friends, had all died under his roof within two or three years before the death of Cook, by poison. His wife had been poisoned by tartar emetic and his brother by prussic acid. The deaths of at least two others were probably violent. Where was the coroner's inquest for the protection of society?

22. In the years 1851–2–3, in 132 counties and boroughs of England and Wales, there were of coroners' inquests:—

In 1851,.....	16,847
In 1852,.....	17,656
In 1853,.....	18,671

Making a total, in three years, of 53,174, and giving an annual average of 17,725, at that date.

At each inquest there were, on an average, from 12 to 15 jurors. Assuming an attendance of 15, then 797,610 jurors were deputed to form an opinion of the causes of death in 53,174 cases, in which the causes were doubtful.

The great want of education amongst the class of men who are summoned on coroners' juries is shown by the fact that, out of 797,610 thus summoned, 34,433 (or, at the lowest estimate, one in twenty-three) were unable to write their names (from a parliamentary return).

23. From a return of more recent date, it appears that inquests are on the increase. Thus, there were of inquests:

In 1857,.....	20,157
In 1858,.....	19,846
In 1859,.....	20,531
In 1860,.....	21,178

There is no doubt that, under proper control and supervision, these inquiries might be considerably reduced in number.

24. The necessity for a skilled, independent inspector of bodies will be apparent from another consideration. A charge of malpraxis is sometimes raised against a medical man in consequence of the death of a patient. The examination of the body may, by order of a coroner, be placed in the hands of a professional rival, or friend, of the person inculpated. This is not just either to the practitioner or the public. There is nothing more easy, medically speaking, than to exaggerate appearances in a body, or to assign to medicines or the use of surgical instruments, post-mortem conditions of the body to which an independent and unprejudiced anatomical inspector would attach, probably, no importance. Supposing the question to be that a patient has died from an

overdose of opium, said to have been found in the stomach. If the analysis has been intrusted to any professional rival, or to an incompetent analyst selected by him, the injury may be irreparable. These are not imaginary cases. They must occur until special inspectors and analysts are appointed in place of men who are now taken by chance, or by the fact of their living in the vicinity, or of their being called to see the person while dying.

25. Lastly, let it be considered that under the present system—if a person has poison administered to him feloniously and he recovers—the facts of the case are duly investigated by a stipendiary magistrate, the evidence properly sifted, analyses properly made when required, and the depositions so drawn up as to form a proper basis of proceedings for the trial of the accused. If, however, the person dies from the poison, the case then goes before a coroner and a coroner's jury, and, although the medical and other questions which arise are of infinitely greater importance to society, they are now dealt with by men generally incompetent to understand them, and who are not qualified to elicit the facts, or put them into a proper shape for trial.

ALFRED S. TAYLOR, M.D., F.R.S.,

Professor of Chemistry and Medical Jurisprudence in Guy's Hospital.

June 14, 1862.

THE GORILLA AND MAN.

AT the recent meeting of the British Association for the Advancement of Science, held at Cambridge, Professor Owen read a paper "On the Zoological Significance of the Brain and Limb Characters of Man, with remarks on the cast of the brain of the gorilla."

Professor Owen exhibited two casts: one of the human brain, which had been hardened in spirits, and had therefore not preserved its exact form; but to all intents and purposes it would serve as an illustration of the human brain. The other cast was taken from the interior of the cranium of the gorilla. From an examination of these the difference between the brain of man and that of monkeys was at once perceptible. In the brain of man the posterior lobes of the cerebrum overlapped to a considerable extent the small brain, or cerebellum, whereas in the gorilla the posterior lobes of the cerebrum did not project beyond the lobes of the cerebellum. The posterior lobes in the one were prominent and well marked; in the other deficient. These peculiarities had been referred to by Todd and Bowman. From a very prolonged investigation into the characters of animals, he felt persuaded that the characters of the brain were the most steadfast; and he was thus induced, after many years of study, to propose his classification of the mammalia, based upon the differences in the development of their brain structure. He had placed man—owing to the prominence of the posterior lobes of his brain, the existence of a posterior cornu in the lateral ventricles, and the presence of a hippocampus minor in the posterior cornu—in a distinct sub-kingdom, which he had called archan-cephala, between which and the other members of the mammalia the distinctions were very marked, and the rise was a very abrupt one. The brain in his estimation was a far better guide in classifying animals than the foot, but the same difference that existed between their brains was also observable between their feet. The lecturer referred to a diagram which represented the feet of the aye-aye, the gorilla, and man, pointing out the chief differences in the structure of the skeleton. These differences he considered sufficiently great to elevate man from the sub-kingdom to which the monkeys belonged, and to place him in a distinct sub-kingdom by himself.

Professor Huxley observed that the paper just laid before the section appeared to him in no way to represent the real nature of the problem under discussion. He would therefore put that problem in another way. The question was partly one of facts and partly one of reasoning. The question of fact was, what are

the structural differences between man and the highest apes? The question of reasoning, what is the systematic value of those differences? Several years ago Professor Owen had made three distinct assertions respecting the differences which obtain between the brain of man and that of the highest apes. He asserted that three structures were "peculiar to and characteristic" of man's brain—these being the "posterior lobe," the "posterior cornu," and the "hippocampus minor." In a controversy which had lasted for some years, Mr Owen had not qualified these assertions, but had repeatedly reiterated them. He (Professor Huxley), on the other hand, had controverted these statements, and affirmed, on the contrary, that the three structures mentioned not only exist, but are often better developed than in man in all the higher apes. He (Professor Huxley) now appealed to the anatomists present in the section to say whether the universal voice of Continental and British anatomists had not entirely borne out his statements and refuted those of Professor Owen. The Professor then discussed the relations of the foot of man with those of the apes, and showed that the same argument could be based upon them as on the brain—that argument being, that the structural differences between man and the highest ape are of the same order and only slightly different in degree from those which separate the apes one from another. In conclusion, he expressed his opinion of the futility of discussions like the present. In his opinion, the differences between man and the lower animals are not to be expressed by his toes or his brain, but are moral and intellectual.

Professor Rolleston said he would try to supply the members of the Association with the points of positive difference between the human and the ape's brain. For doing this we had been abundantly shown that the hippocampus minor and the posterior lobe were insufficient. As differentive they must be given up at last. But as much had recently been done for the descriptive anatomy of the brain by Gratiolet and others as had been done for astronomy by Stokes and Adams, for language by Max Müller, and that this had been ignored in this discussion was little creditable to British science. This analysis of the brain's structure had established as differentive between man and the ape four great differences—two morphological, two quantitative. The two quantitative are the great absolute weight and the great height of the human brain; the two morphological, the multifidity of the frontal lobes corresponding to the forehead, usually, popularly, and, as this analysis shows, correctly, taken as a fair exponent of man's intelligence, and the absence of the external perpendicular figure. This had been abundantly shown by Gratiolet. No reference to these most important matters had been made by Professor Owen, and this omission could not fail to put the British Association's repute for acquaintance with the work of foreign fellow-labourers at great disadvantage in the eyes of such foreigners as might be present. Professor Rolleston concluded by saying, that if he had expressed himself with any unnecessary vehemence he was sorry for it, but that he felt there were things less excusable than vehemence, and that the laws of ethics and love of truth were things higher and better than were the rules of etiquette or decorous reticence.

Mr W. H. Flower, looking at the subject solely in an anatomical view and as a question of fact, stated that the result of a considerable number of dissections of brains of various monkeys was that the distinction between the brain of man and monkeys did not lie in the posterior lobe of the hippocampus minor, which parts were proportionately more largely developed in many monkeys than in man, and that if these parts were used in the classification of man and the monkeys the series would be,—first, the little South American marmosets, then would follow the baboons, the cercopithea, macaque, then man must be placed, followed by the antropoid apes, the orang-outang, chimpanzee, and gorilla, and last, the American howling monkey. (A laugh.)

Dr Humphery and *Dr Molesworth* having said a few words,

Professor Owen replied. Professor Rolleston had led the meeting to conclude that he had not paid any attention to the convolutions of the brain of mammals, and that the investigation of this subject was the exclusive property of the

German anatomists, whereas he might be permitted to state that almost at the very time that Leuret wrote his memoir on this subject, he had delivered a course of lectures on the convolutions of the brain, which, he regretted, had not been published, owing to the pressure of other labours; but the diagrams were still in existence, as his successor could testify, in the Museum of the Royal College of Surgeons.

The thanks of the section were given to the Professor for his communication.

DINNER TO PROFESSOR GAIRDNER.

ON Tuesday the 21st of October, Dr W. T. Gairdner was entertained at dinner by a number of his professional brethren, on the occasion of his leaving Edinburgh to enter upon his duties as Professor of the Practice of Medicine in the University of Glasgow. The company numbered upwards of sixty, and included the Presidents of the Colleges of Physicians and Surgeons, Professors Syme, Simpson, Miller, and MacLagan, Drs John Gairdner, Alexander Wood, Andrew Wood, Strachan of Dollar, etc. etc. The chair was filled by Dr Craigie, President of the College of Physicians; Dr Newbigging, President of the College of Surgeons, acted as croupier.

ROYAL INFIRMARY OF EDINBURGH.

Dr D. R. Haldane has been appointed one of the Ordinary Physicians to the Royal Infirmary, in the room of Dr W. T. Gairdner, elected Professor of the Practice of Medicine in the University of Glasgow. Dr T. G. Stewart has been appointed Pathologist to the Infirmary, in the place of Dr Haldane.

THE LATE DR FAIRBAIRN.

WE have to record the death of this amiable and excellent man. The sad event occurred on the evening of the 16th ultimo, after an illness of about four weeks' duration. Obstruction in the veins of the lower limbs, in all probability the result of inflammatory action, consequent on fatigue in walking, was succeeded by symptoms of embarrassment to the pulmonary circulation: while thus suffering, sudden syncopal attacks accompanied by great dyspnoea occurred, one of which proved fatal. It was conjectured that an embolism of the pulmonary artery best explained the somewhat remarkable phenomena in the case, and this opinion was verified by a post-mortem examination.

Dr Fairbairn had attained his seventy-first year, having been born at Galashiels on the 8th of June 1792. His medical education was pursued at Edinburgh, and in 1812 he passed the Navy Medical Board. He subsequently served on board H.M. ship "Saturn" on the West India station, and in the "Superb" at the bombardment of Algiers in 1816 by Admiral Lord Exmouth. Of the latter vessel Dr Fairbairn was at the time assistant-surgeon; he thereupon received a medal and clasp, and was promoted to be surgeon. On the surrender of Napoleon in the preceding year, to Captain Maitland of the "Bellerophon," Dr Fairbairn, along with the other officers of the "Superb," had the honour of an introduction to the Emperor, and of breakfasting with him. Returning to Edinburgh, Dr Fairbairn graduated in 1819, and shortly afterwards resigned his appointment in the navy. From that time he was actively engaged in practice, and always commanded a very considerable share of public confidence, as well as at all times the regard and affection of his professional brethren.

Dr Fairbairn became a Fellow of the Royal College of Physicians in 1833, his name, till recently, occurring on the roll immediately after that of the present distinguished president of the body, and before that of the late Professor Traill. He was also for some years a member of council.

Dr Fairbairn was medical officer to the House of Refuge, and, during the whole period of his connexion with the institution, discharged his onerous duties to the entire satisfaction of its managers. He was nearly related to Mr William Fairbairn, the eminent engineer of Manchester, and to the late Sir Peter Fairbairn, mayor of Leeds.

AN OPHTHALMIC EMPIRIC.

PROFESSOR TROUSSEAU, in a recent clinical lecture, narrated the following anecdote:—Empirics, sad to say, are generally well received by men of genius. I had the extreme honour of being the intimate friend and medical adviser of the illustrious Béranger. In 1848 he had a slight ophthalmia, for which M. Bretonneau had ordered him a collyrium. The ophthalmia got well, but as Béranger read and worked a great deal, and had a slight scrofulous tendency, it returned; whereupon the poet addressed himself to a Polish priest who professed to cure all diseases of the eye by means of a secret remedy. At that time I was President at the Faculty of Medicine, of the jury charged with the examination of the officers of health. As the Polish priest had had some difficulties with the police in consequence of having put out some eyes, he wished to become a regular practitioner. Accordingly he went to Béranger, and asked if by his influence he could get admitted officer of health, in order that he might treat eyes and blind the public at his convenience. Béranger called on me and said, "My friend, do me a great service; try and get this poor devil received; he only meddles with diseases of the eye, and although the examination of the officers of health comprises all the branches of the healing art, be indulgent, be merciful; he is a refugee; and, best reason of all, he has cured me." I replied, "Send me your man." The Polish priest came to my house. "You are recommended to me," I said, "by a man whom I am most anxious to oblige; he is the dearest of my friends; moreover, he is Béranger, which is still better. Two of my colleagues to whom I have spoken, and myself, have agreed to do what we can for you; still, our examinations are public." I added, "I shall take anatomy, and it will not be difficult for you to know anatomy as well as I do; I shall examine you on the eye." Our friend seemed disconcerted. I continued, "you know what the eye is? Very well! You know that there is an eyelid?" "Yes." "You have some idea of what the cornea is?" He hesitated. "The pupil?" "Ah! Sir, the pupil, I know that well." "Then, do you know what the crystalline lens is, the vitreous humour, the retina?" "No, sir; what good would that do me, I only treat diseases of the eye?" I said to him, "That might do you some good, and I assure you, you would almost require to know that there is a crystalline lens, especially if you wished, as it appears you sometimes do, to operate for cataract." "I do not operate in such cases," said he. "But," I said, "if the idea occurred to you to extract one?" I could get no further. The wretch wished to practise as an oculist without having the slightest notion of the structure of the eye.

I went to Béranger and told him the circumstances. Béranger exclaimed, "But this poor man!" I said to him, "My dear Béranger, I have been your physician for the last eight years, and now I am going to ask for my fees." "What fees?" "You shall write me a song, which you shall dedicate to me, but it is I who shall furnish the chorus." "Ho! ho! And what chorus?"

"Ah! que les gens d'esprit sont bêtes!"

From that time the matter was understood between us, and he spoke no more to me of this Polish priest.—*Gazette des Hôpitaux.*

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☛ Publications and Periodicals for this Journal should be addressed—

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Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*On Lupus and Cancroid of the Vulva: Experience in the Royal Infirmary of Edinburgh.* By J. MATTHEWS DUNCAN, M.D., Clinical Lecturer on the Diseases of Women.

Lupus of the Vulva.

ONLY one case of lupus of the vulva has come under my care in the Royal Infirmary. It is interesting as a well characterized example of a disease which is not familiar to the profession. The case was probably not of very long duration, and the disease had not advanced very far; but already its ravages were considerable. It is important to remark that the most careful investigation of the person and of the history of the woman detected no reason even to suspect a syphilitic taint complicating the affection. To myself this was specially valuable, because such cases of lupus of the vulva as had previously come under my observation had generally been in women who either had certainly had syphilitic disease, or who were not free from suspicion of having been so affected, and I was inclined to ascribe too much importance to syphilis as a predisposing cause, or even to regard the disease as a tertiary form of that malady. The disease is one which is mostly seen among the poor and wretched, and dirty; but in the case to be related there were no such conditions, the woman being apparently in at least a comfortable position in life. The remarkably slight increase of sensibility, even in the ulcerated parts, is to be observed as a peculiarity in the affection. The case is indeed one of simple lupus, with extensive ulceration and inconsiderable hypertrophy of the characteristically leaden-coloured labia majora. M. Huguier, who has the merit of carefully describing and attracting professional attention to this disease,¹ enters at some length on the analogies or homologies of the face and the anovulvar region. This disease, no doubt, suggests a striking pathological analogy between the two, and in this connexion I wish only to remark that the patient, whose case here follows, had that peculiar character of countenance, espe-

¹ Memoires de l'Academie Royale de Medicine, tome xiv., 1849. The profession in this country are indebted to Dr West for an excellent account of this disease. See his work on the Diseases of Women.

cially of the conjunctival margins and of the skin of the face, which suggests a proclivity to lupus in that part. Besides, she had on her nose and other parts of her face several small chronic red papules or tubercles, which may be regarded as something more than an indication of a mere tendency to this disease.

I regret that I have no notes of other cases which I have seen. But I may state that they have all been instances in which there was great and deformed hypertrophy of the labia and nymphæ which were sometimes also fenestrated, and that the most exaggerated cases have been in prostitutes; the disease being worthy of the name of elephantiasis, the hypertrophy being great, and the ulceration inconsiderable. Such cases differed from the following one in offering great advantage to be gained by excision of the prominent parts. I may here remark that, in medical writings, several cases are to be found, which are evidently examples of this disease, but which, from the knowledge of its pathology being insufficiently diffused, get the name only of hypertrophy; and from this condition, a simple pathological enlargement, their histories and characters do in many cases satisfactorily differentiate them.

CASE.—Mrs D., æt. 28, had had four children, of which the last was born two years ago. Since this last confinement she had never been without a vaginal discharge, which had been always moderate in quantity. She had always enjoyed good health, and the catamenia had always been regular. Since her last confinement coition had caused her some pain, and she had some pain in micturition. She had for a year been liable on over-exertion, or on using any stimulating beverage, to an eruption on her face, neck, and arms, of red spots, which, in two or three days, became bluish and disappeared. Her appetite was bad, and the bowels constipated.

On admission, she is found to have the appearance of a healthy young woman. Only she has a peculiar redness of the edges of the eyelids, an unhealthy hue of the skin of the face, and on the latter, as well as on her neck, some red papules, which are not recent, and some of which, on the face, are larger than others.

The labia majora and nymphæ are evidently hypertrophied, and have a somewhat bluish or leaden tint; the raphe of the perineum is broad, prominent, and like a condyloma; it is continuous with a mass of the same kind surrounding the anus, but projecting unequally at different parts. On separating the labia an extensive ulceration is discovered, surrounding three-fourths of the vulvo-vaginal orifice posteriorly. The orifice of the urethra and its neighbourhood are much thickened, but there is no ulceration there. The ulceration, when carefully exposed, measures about three inches from side to side, and varies in its antero-posterior diameter from one to two inches. Its edges are somewhat sinuous, and overlap, or are folded inwards, upon the ulcer. The whole ulcerated surface is covered with pale granulations, which are smeared over with pus. The granulations do not bleed on being cautiously, though firmly, touched with the bulb of the finger. On touching the ulcer the sensation communicated suggests the idea of the granulations resting on stiff parchment, or a thin layer of cartilage of the size and shape of the ulcerated part. This examination gives very little pain. The rest of the vagina and uterus are healthy.

In a few days after admission the mass of new tissue surrounding the anus was removed; cauterizations of the ulcer by nitrate of silver were commenced; it was dressed with lint dipped in black wash; and Donovan's drops were administered internally; but little can be said of the treatment of the case, for the patient soon unexpectedly absconded.

Cancroid of the Vulva.

The following case affords the only example of this uncommon disease of the vulva, which has come under my observation in the Royal Infirmary. It is one of the forms of epithelial cancer, a disease which specially affects the genital organs of both sexes. In women, epithelial cancer attacks the mucous membrane of the interior of the uterus, of the cervix uteri, of the vagina, and the mucous membrane or skin of the vulva. It is most frequently observed in the cervix uteri, and then it forms the disease, in many cases recognised only as cancer of the neck of the womb, and, besides, it forms the more or less characteristic cauliflower excrescences. In the case to be recorded the disease began at the junction of two kinds of integumentary membrane, and at a natural opening of the body, that is, where the skin and mucous membrane of the labia majora unite. The cauliflower excrescence of the neck of the womb is similarly situated in these two respects, for two kinds of mucous membrane are continuous with one another at the os uteri; and epithelial cancers are frequently noticed in other situations under the same conditions.

Under microscopic examination the tumours showed the characters of the papillary or cauliflower growth; and Dr Haldane also observed, in some sections of them, the peculiar pearly bodies which are described as occurring in such epithelial tumours. The disease was undoubtedly in an early stage, and although the discharge from it was considerable, it was slight in comparison with the amount coming from a similar growth on the genital mucous tract within the body. It is interesting to notice that, at this early stage of the disease, inguinal glands were enlarged and tender; but it must be added that the history of the disappearance of this affection of the glands shows that it arose from simple irritation, not from extension of the malignant disease to them.

CASE.—Mrs P., æt. 60, has had four children, the last of which was born twenty years ago. She ceased to menstruate about the age of 50 years. She has always enjoyed good health till recently. Last autumn she observed a small tumour growing on the right labium, and from it there came a watery discharge. In the beginning of April it began to increase rapidly in size, and it soon became fissured and rough, and an increase of discharge also took place.

She was admitted into the Infirmary on 14th May. At the posterior extremity of the right labium there is a hard movable mass of the size of a large hazelnut, and having a wart-like surface, rough and fissured, and yielding some thin yellowish discharge. In the left nympha, below the point of the clitoris, there is a mass of the same kind as the former, but of smaller size. On the mons veneris, just above the upper extremity of the left labium, there is another similar mass, still smaller than that last mentioned, being of the size of a large pea. These tumours are at times the seat of exquisite pain, and are also very tender to touch. There are two enlarged and slightly tender glands in the left groin.

On 17th May the whole diseased parts, along with some neighbouring healthy structures, were removed by the knife. Considerable bleeding occurred, requiring the ligature of several vessels. It was attempted to heal the wounds

by first intention, but this result did not take place. The urine was withdrawn by catheter until the healing of the wounds had far advanced to completion.

In a few days after the operation the enlargement and tenderness of the inguinal glands disappeared. The wounds did not heal till the end of June. On 2d July she was dismissed cured. On 23d July she reported herself as quite well, and promised to inform me if any suspicious appearance or symptom returned; but I have heard no more of her.



ARTICLE II.—*On the Treatment of the Deeper-seated Inflammations of the Eye (Scleritis and Iritis), by Morphia.* By JOHN ZACHARIAH LAURENCE, F.R.C.S., M.B. Univ. Lond., Surgeon to the Surrey Ophthalmic Hospital, London.

THE inflammations of the eye may, for the purposes of treatment, be divided into three divisions: 1st, Of the conjunctiva; 2d, Of the sclerotic and iris; 3d, Of the choroid and retina.¹ In many cases the first and second divisions, or the second and third, are blended together, but, generally speaking, the symptoms of one of these divisions so predominate, as to—certainly in a therapeutic point of view—give us the right to refer any given case to one division exclusively. Thus, in most cases of mucous conjunctivitis (“catarrhal ophthalmia,”) the sclerotic participates to a certain degree in the inflammation, but to so slight a one, as to make us practically ignore its existence; whilst in a case of iritis, on the other hand, we should grievously err, if we attached any undue importance to the accompanying conjunctivitis. It is to the treatment of cases of scleritis and iritis to which I wish to direct attention. At the risk of being prolix, I shall now state what I understand by these two terms.

In scleritis the vascularity is on, or in, the sclerotic; the vessels are less tortuous than in conjunctivitis; they appear to have a special predisposition to congestion in the ciliary zone (“cyclitis” of the German authors); in some acute cases the entire sclerotic is covered with congested vessels, in others the vascularity is equally great, but the vessels are of a hair fineness and hence the general appearance of the eye is much less red. The vessels (or rather their contents) are of a lake colour, with a tendency to purple, or even to a dull, leaden hue in some chronic cases. There is generally a copious secretion of an aqueous fluid, to which is often ascribed by the patients the property of scalding and excoriating the skin of the parts around the eye. The pain is very characteristic. It is of a throbbing, pulsatile nature, as that of commencing abscess; with this pain alternates, to a greater or less degree, a second pain of a dull, aching character. The pain is in the eyeball, the supra-orbital, semi-frontal, temporal, malar, nasal regions, and sometimes affects one entire side of the head (hemicrania); it is, in a word,

¹ This third division has only been rendered absolutely diagnosable since the introduction of the ophthalmoscope.

in the divisions of the fifth nerve. It is almost invariably worse at night, so much so as frequently to partially or entirely deprive the patient of sleep. Photophobia is commonly present, as is also a confused, misty state of vision.

In the above description will be recognised the general features of "rheumatic ophthalmia:" if associated, as often happens, with mucous conjunctivitis, we have the "catarrho-rheumatic ophthalmia" of authors. Acute iritis generally presents all the above symptoms, but in addition the iris will be found to have lost the brightness of its colour and the distinctness of its striæ; to be sluggish or altogether immovable to light; its pupillary margin irregular or extensively adherent to the anterior capsule of the lens ("synechia posterior," which is often only apparent after the action of atropine),¹ the pupil being in extreme cases completely occluded by lymph. As a result of this, or more commonly of coexisting choroiditis, retinitis, or obscurations in the vitreous humour, vision is generally materially impaired.

Now the accepted and practised treatment of these cases of sclerotitis and iritis is a selection or combination of bleeding, leeching, cupping, blistering and mercurialisation. In October 1858, I met with a case of sclerotitis (Case 1), in which the pain was so intense that I prescribed morphia with a view of relieving the suffering of the patient; but finding to my surprise that it not only effected this object, but also had a marked curative influence on the inflammation generally, I was led to institute a therapeutic inquiry into the influence of morphia (opium) on cases of acute sclerotitis and iritis. In the Medical Times and Gazette for December 31, 1859, I submitted to the profession six well-marked cases treated by this method. From numerous verbal and epistolary communications which after the publication of these cases reached me from practitioners, and from the fact that the paper referred to was reproduced in several British and Continental periodicals, I was encouraged to pursue the inquiry, and now submit a series of well-marked cases to the judgment of the profession. The greater number of these cases are given in detail, but they all so closely resemble one another that I have, for the sake of brevity, merely given the few last in outline, although I possess equally full notes of these as of the rest. The cases I submit are nearly all acute cases; I have treated many more sub-acute cases on the same plan; but as I have often found such ones get well of themselves, they afford no direct evidence of the value of my treatment. In all cases any applications the patients used previous to their consulting me have been continued by me. The opium has been prescribed in its

¹ Many cases of iritis would (and I am convinced every day do) escape detection from neglecting to instillate atropine, which invariably renders apparent the slightest adhesions that may be present. These are generally of a peculiar rust colour, as is shown by oblique illumination. Similar rust-coloured punctiform exudations are often simultaneously observed on the inner surface of the cornea.

most simple form, that of morphia. In some cases (iritis principally) I have felt it my duty, in the interest of the patient, to add local applications of belladonna, which are, however, mentioned in any such cases.

CASE. 1.—*Acute Sclerotitis—Morphia Treatment—Decline of the Disease in about four-and-twenty hours.*—S. S., a middle-aged woman, was admitted to the Surrey Ophthalmic Hospital on 3d November 1858. The sclerotic was intensely injected, the conjunctiva slightly; the "sclerotic zone" well marked. She suffered such severe shooting pain in the eyeball, eyebrow, and infra-orbital region, as to render her quite sleepless.

3d November.—R. Morph. hydrochlor. gr. $\frac{1}{2}$, every third hour. Warm water fomentations to the eye.

6th.—Took the morphia regularly up to four P.M. yesterday, when she took the last powder. Towards the evening of the 4th the pain in the eye began to abate; now she feels but a slight aching in the eye on exposure to light. The sclerotic vascularity has considerably diminished. She now recovered rapidly under the treatment of a slight conjunctivitis.

CASE 2.—*Acute Sclerotitis—Morphia Treatment—Decline of the Disease in less than twelve hours.*—H. B., an elderly but strong man, admitted to the St Marylebone Dispensary, 27th July 1859. Sclerotitis of a week's duration, characterized by intense vascularity of the sclerotic, and a "sharp, burning" pain in the eyeball and forehead, with nocturnal exacerbation, rendering the patient sleepless. Suffering simultaneously from gout in the great toe. Has done nothing but foment the eye. R. Morph. hydrochlor. gr. $\frac{1}{2}$, 3tia. quâque horâ. Warm-water fomentations to the eye.

29th July.—Has taken the medicine as prescribed. Slept well, but not heavily, on the night of the 27th after midnight, when the hitherto severe pain in the eye left him. To-day, the vascularity of the tunics greatly diminished; the pain in the eyeball, brow, and forehead gone, leaving but a trifling pain at the side of the nose. Bowels have not acted since the 27th. To leave off the morphia and take an ounce of castor-oil.

1st August.—Perfectly recovered.

CASE 3.—*Double Acute Iritis—Failure of Leeching and Mercurialisation—Morphia Treatment—Decline of Disease within four-and-twenty hours.*—E. P. was admitted to the Surrey Ophthalmic Hospital on 27th August 1859. During my absence from town, and up to 10th September, when I first saw her, had been treated by leeching, blistering, mercurialisation, and belladonna lotion for the previous three weeks.

10th September.—Iris discoloured; sclerotic deeply injected; pupils dilated (from the belladonna lotion); humours muddy; complains of pain in the eyeballs and eyebrows, "like a rheumatic pain, of an overwhelming weight, of the light causing her great agony;" eyesight very dim. R. Morph. hydrochlor. gr. $\frac{1}{2}$, 4ta. quâque horâ. Warm water fomentations to the eyes.

14th.—Took the first dose of medicine on the night of the 10th. The pain abated, and she expressly stated "very suddenly." She slept that night. On the following morning she could face the light much better. The medicine has made her feel very sick and drowsy. To-day she complains only of a little "pricking and shooting pain." Her eyes are still dim and weak, but the sclerotic injection is nearly gone.

28th.—Since the last report, has been taking the morphia in diminished doses, and subsequently a grain of quinine three times a-day. Her eyes are to all appearance perfectly sound; nothing remains of her disease but a slight haziness of vision.

CASE 4.—*Acute Sclerotitis—Morphia Treatment—Decline of the Disease in about seven hours.*—B. L., aged 40, a working engineer, was admitted to the Surrey Ophthalmic Hospital on 24th September 1859. Five or six years ago he was struck on the now-inflamed eye by something from a forge-fire. He

recovered from the accident in about a month. The eye has been inflamed, as it is now, for the last three weeks. It presents all the usual signs of acute scleritis; great sclerotic vascularity (the "sclerotic zone" well marked), excessive lachrymation, great pain (especially at night, rendering him sleepless) referred to the eyeball, eyebrow, and temple, and compared by the patient to the sensation of "a weight hanging from his forehead, and pulling him down;" eyesight "foggy;" over the inner part of the cornea a rust-coloured opaque speck, with a minute depression in its centre, evidenced the accident of five years back, but the most careful examination failed to detect any foreign body in the anterior chamber.

24th September.—R Morph. hydrochlor., gr. $\frac{1}{2}$, every third hour, watching its effects; warm water fomentations to the eye. Took the first dose about four P.M., felt sleepy about six P.M.; second dose about seven P.M.; the pain began then gradually to "die away;" the third dose about eleven P.M.—slept for three or four hours. The following day (Sunday) at noon, but trifling pain was felt, and he slept soundly that night.

28th.—The case is reduced to one of slight conjunctivitis; all pain has left him; found his bowels confined from the medicine. To leave off the morphia, and take a purgative dose of calomel and colocynth, which completed the cure.

CASE 5.—*Traumatic Acute Scleritis—Morphia Treatment—Decline of the Disease in less than four-and-twenty hours.*—C. H., aged 46, was on a Thursday evening engaged in Messrs Maudslay's factory, pouring some molten iron into a sand mould, when a quantity of hot sand flew into his eye. He came to the Surrey Ophthalmic Hospital on Saturday, 1st October 1859. With the exception of two minute particles of sand, which I removed with a spill of blotting-paper, all the sand had been extracted by one of his fellow-workmen. I found him suffering from intense scleritis, marked by universal and high vascularity of the sclerotic and conjunctiva, great lachrymation and excessive pain in the eyeball, compared by the patient to the "prodding of a knife," and rendering him quite sleepless.

1st October.—R Morph. hydrochlor., gr. $\frac{1}{2}$, every third hour. Warm-water fomentations.

Took the first dose of morphia about three P.M., and then regularly every three hours. It made him feel very drowsy, and that (Saturday) night he slept soundly. The violent pain was entirely gone on the following morning.

3d.—The case reduced to one of a simple conjunctivitis, and treated by a purgative dose of calomel, which completed the cure.

CASE 6.—*Acute Scleritis—Failure of the Morphia Treatment—Recovery under Depletion and Mercurialisation.*—E. S., aged 48, applied at the Surrey Ophthalmic Hospital on 12th January 1859. About twelve months before, she lost the sight of the now-inflamed eye by a blow from the cork of a soda-water bottle. The consequent inflammation of the eye lasted for only a few days; but three or four months afterwards her eyesight began gradually to fade, and she can now only distinguish the outlines (but not the colours) of objects with the injured eye. About three weeks before applying to the hospital she caught cold in the eye, which now presents the following signs:—Intense sclerotic and conjunctival vascularity ("sclerotic zone" well marked); pupil central, of medium size, angular, destitute of contractility. Pain intense, referred to the right eyeball and right side of the head, proceeding from the vertex downwards to the level of the ala nasi.

12th January.—R Morph. hydrochl., gr. $\frac{1}{3}$, 4ta quâque horâ. Warm-water fomentations to the eye.

15th.—Pain and other symptoms unabated. She recovered slowly under leeching, blistering, and mercurialisation.

Whether in this case the deeply diseased state of the eye, or the (too) small doses of the morphia, influenced the failure of the drug, must remain a matter of conjecture.

CASE 7.—*Acute Scleritis—Failure of Counter-irritation—Morphia treatment—Decline of Inflammation in less than twelve hours.*—E. K., æt. 22.—26th August

1860. Duration, seven days. Sclerotic and conjunctival injection; iris unimplicated. Pain in eyeball, supra-orbital, malar, and frontal regions; intense, lancinating, depriving patient of sleep for five nights. Has been blistered on the temple, and used warm fomentations without relief.—R Morph. hydrochl. gr. ½, 3tia quâque horâ. Mitte doses xii.

29th August.—Took three doses before bed-time of the 26th; first dose made her feel sick, second relieved, third removed the pain. Slept. Subsequently took all the doses.

To-day she is free from pain and the eye is uninjected. The only symptoms she now suffers from are sickness and faintness (from the morphia). These were soon relieved by an effervescing saline.

CASE 8.—*Double Acute Conjunctivo-Scleritis—Morphia Treatment—Subsidence of the Inflammation during the Treatment.*—M. S., æt. 30.—1st December 1860. Duration in left eye, a week; in right eye, four days. In right eye there is intense conjunctivitis, sub-conjunctival hæmorrhages, profuse purulent discharge; intense pain in eyeball, temple, and infra-orbital region; considerable œdema above and below the eye. In the left eye the same symptoms, but much less acute, although they have previously been equally so. Irides of both eyes unimplicated.—R Morph. hydrochlor. gr. ½, 3tia quâque horâ. Mitte doses vi. To the right eye, Argent nitrat. (gr. x. ad 3i.), to left (gr. iv. ad 3i.) applied.

5th December.—Took first dose on 1st December 4 p.m., then three more doses at intervals of three hours, then the two last doses at an interval of five hours. After the two first doses found "great relief," and slept well that night. Took the last dose the following night. The next morning the pain recurred in the right eye, and has continued till to-day (Dec. 5.) The objective signs of inflammation of the sclerotics gone, but still considerable vascularity of the conjunctiva. The morphia did not cause any unpleasant symptoms. Repete morphiam.

12th.—Still slight aching in the eyeballs.

16th.—Cured.

CASE 9.—*Acute Iritis—Morphia Treatment—Decline of the Disease in twelve hours.*—R. W., æt. 22.—5th December 1860. Duration, one week. Iritis, synechiæ anteriores, brought out by atropine—intense scleritis and conjunctivitis. Great pain in the eyeball, supra-orbital and temporal regions, of a "pricking" character. Has used warm fomentations.—R Morph. hydrochlor. gr. ½, 3tia quâque horâ. Mitte doses vi. R Lot. belladonnæ.

8th Dec.—After four doses, found relief from the pain. Continue treatment.

9th January 1861.—Still a good deal of pain at night in the eyeballs; injection of tunics much less; states he sees much better; pupil, after dilatation by atropine, tolerably circular. It was three weeks before this patient was perfectly cured.

CASE 10.—*Sub-acute Scleritis—Morphia Treatment—Cure.*—M. S., æt. 30. 8th December 1860. Duration, fortnight; symptoms on the increase for last week. Sclerotic and conjunctival injection; iris unimplicated; pain worse at night, but for the time relieved by three leeches, which she applied.—R Morph. hydrochlor. gr. ½, 3tia quâque horâ.

12th December.—Nearly all sclerotic symptoms gone; the medicine created slight nausea. The residuary conjunctivitis was treated by the local application of Argent. nitr. (gr. x. ad 3i.), and atropine instillations.

CASE 11.—*Acute Iritis—Morphia Treatment—Decline of Disease within twelve hours—Cure.*—J. S., æt. 29.—26th January 1861. Duration, nine days; the symptoms now at their height. Extreme vascularity of tunics; texture of iris indistinct when compared with that of the sound eye; an eight-grain solution of atropine produced no dilatation of the pupil. The pain is acute, referred to the eyeball, eyebrow, temple, and side of the face, and so intense latterly as to have deprived her of sleep. Has used warm fomentations.—R Morph. hydrochlor. gr. ½, 3tia quâque horâ. Mitte doses xii. R Ung. belladonnæ above brow. Warm fomentations.

30th January.—The third dose “eased her head wonderfully;” the pain disappeared entirely after the ninth powder (taken on 28th January), and has not recurred since. The medicine caused no unpleasant symptoms.

This patient got rapidly well after the above date.

CASE 12.—*Conjunctivo-Scleritis—Morphia Treatment—Decline of the Disease within twenty-four hours.*—M. L., æt. 46.—10th April 1861. Duration, eight or nine days. General injection of sclerotic and conjunctiva; iris unimplicated. Considerable discharge of tears and purulent matter. Severe pain in the supra-orbital region (none in the eyeball or temple), compared to a “stabbing,” and rendering her sleepless. Has been using warm fomentations and some eye-water. R Morph. hydrochlor. gr. $\frac{1}{2}$, 3tia quâque horâ. Mitte doses vi. Warm fomentations.

13th April.—The pain left her after taking five doses at intervals of three hours. Has slept well since. The medicine created intense nausea, faintness, and drowsiness. Still very considerable conjunctival inflammation. This was soon cured by strong nitrate of silver and atropine instillations.

CASE 13.—*Sub-acute Scleritis—Morphia Treatment—Decline of the Disease in three days.*—T. Z., æt. 30.—7th May 1861. Duration, four days. Moderate injection of sclerotic. Great pain, especially at night, in the eyeball and eyebrow.—R Morph. hydrochlor. gr. $\frac{1}{2}$, 3tia quâque horâ. Warm fomentations.

15th May.—Three days after commencing the treatment, the sclerotic symptoms disappeared, probably as a natural tendency of the disease itself. The first dose of the medicine created some nausea, but the subsequent ones produced no unpleasant effects.

CASE 14.—*Sub-acute Scleritis—Morphia Treatment—Decline of the Disease in less than twelve hours.*—E. T., æt. 19.—8th May 1861. Duration, five days. Moderate injection of sclerotic and conjunctiva. Considerable pain in the eye, especially at night. R Morph. hydrochlor. gr. $\frac{1}{2}$, 3tia quâque horâ.

After the third dose she found herself so relieved, that she took no more and soon got entirely well.

CASE 15.—*Acute Conjunctivo-Scleritis—Morphia Treatment—Recovery in about four days.*—E. D., æt. —, 29th May 1861. Duration, three days. Intense injection of the tunics and swelling of the lids. Considerable discharge of purulent matter. Great pain in the temple, which prevents her sleeping.—R. Morph. hydrochlor. gr. $\frac{1}{2}$, 3tia quâque horâ. Argent. nitrat. gr. x. ad \mathfrak{z} i., and atropine, gr. iv. ad \mathfrak{z} i., applied locally.

1st June.—Much improved; pain nearly gone, but still troublesome at night. R Morph. hydrochlor. gr. $\frac{1}{2}$, omni nocte.

Shortly after this report the patient was convalescent.

CASE 16.—*Acute Conjunctivo-Scleritis—Morphia Treatment—Subsidence of Disease in the Right Eye in three days, followed by similar Disease in Left during the Treatment, which subsided in about a week.*—E. N., æt. 38.—22d December 1860. The right eye inflamed for five days. Now considerable scleritis accompanied by slight conjunctivitis in the right eye. Sleep disturbed by acute pain, referred to the eyeball and right side of the head. Has been fomenting the eye with warm milk and water.—R Morph. hydrochlor. gr. $\frac{1}{2}$, 3tia quâque horâ.

25th December.—After twelve doses the pain ceased permanently in the right eye. The left eye was attacked after having taken two doses; now is as severely inflamed as the right was. Rep. Morph.

29th.—Inflammation of both eyes now nearly gone.

5th January 1861.—Cured.

CASE 17.—*Acute Iritis—Morphia Treatment—Subsidence of the Disease in about four days.*—S. T., æt. 46.—23d October 1862. Eight or ten days ago, experienced a pain above the right eyebrow, which shot up the same side of the forehead, and has for the last three or four days attacked the globe and temple. The iris I found fixed, contracted, and muddy; atropine brought out a synechia posterior with a deposit of a brown colour on the capsule of the lens. Intense injection of tunics. For the last two years and a half he has

used convex glasses of $7\frac{1}{2}$ inches focus constantly; previously he used weaker ones for five or six years, and has worn still weaker ones ever since he was a youth. After mydriasis I detected an hypermetropia of the left eye of $\frac{1}{4}$, without any amblyopia. He has been using warm fomentations to the inflamed eye.—R Morph. hydrochl. gr. $\frac{1}{4}$, every 3d, 4th, or 5th hour, according to its effect on the pain. R Extr. belladonnæ, \mathfrak{z} i.; T. opii, \mathfrak{m} xx.; axung., \mathfrak{z} ij., as an ointment for the eyebrow.

26th October.—Took ten doses of the morphia; the effect was to diminish the pain by day, without much influence at night. The injection of tunics less. He says his sight is much improved. Dose of morphia increased to gr. $\frac{1}{8}$. Rep. Ung. belladonnæ.

30th.—After four doses of the morphia the pain entirely left him. The iris appears nearly natural. His sight nearly recovered.

3d November.—No traces of the iritis remain. With the previously affected (right) eye, he reads at 17 feet, No. 23; with + 12 No. 18: after mydriasis I found an hypermetropia of $\frac{1}{4}$ in this eye.

CASE 18.—*Sub-acute Sclerotitis of Left Eye—Acute Scleritis of Right—Morphia Treatment—Cure.*—T. M., æt. 26.—19th April 1862. Scleritis sub-acute of left eye of four days' duration, accompanied with a pretty sharp pain in the eyeball, side of the nose, and eyelid.

This inflammation not being sufficiently acute to afford any test of the morphia treatment, was cured by leeches and lot. belladonnæ.

23d April.—The other eye is now the subject of acute scleritis; the tunics are highly vascular; the pain in the globe so intense as to entirely deprive him of sleep.—R Morph. hydrochlor. gr. $\frac{1}{4}$, 3tia quæque horâ. R Lot. belladonnæ.

26th.—Took four doses of the morphia. It relieved the pain, which, however, still exists to a certain degree in the globe; the medicine did not make him feel generally unwell at all. Still considerable injection of tunics. Rep. Morphia.

3d May.—The vascularity has now entirely disappeared, and so has the pain; but the patient suffers from weakness and loss of appetite. Within a week afterwards the case was completely cured.

CASE 19.—Acute scleritis and conjunctivitis mucosa of one day's duration. Failure of the morphia treatment.

CASE 20.—J. B., æt. 23. Corneo-iritis; duration three weeks. Pain, dimness of vision, haziness of fundus oculi; failure of depletion. Morphia treatment (gr. $\frac{1}{4}$), and lot. belladonnæ. Vomiting and general malaise from medicine, but subsidence of disease within twelve hours.

CASE 21.—M. H. Traumatic scleritis of three days' duration; great intra-ocular pain, depriving patient of sleep. Morphia treatment (gr. $\frac{1}{4}$.) Cure complete in three days.

CASE 22.—G. W., æt. 30. Acute scleritis and iritis of one week's duration. Morphia treatment (gr. $\frac{1}{4}$), and belladonna lotion. Failure of the treatment, depletion and calomel and opium. Cure very protracted (in about three weeks).

CASE 23.—C. G., æt. 36. Acute scleritis of right eye of five days' duration, of left eye of eighteen hours'. Intense pain of right globe and dimness of vision. Morphia treatment (gr. $\frac{1}{4}$.) Ultimate, but protracted cure.

CASE 24.—E. B., æt. 21. Slight scleritis of right, acute of left eye of three days' duration. Pain of left eye intense, rendering patient sleepless. Morphia treatment (gr. $\frac{1}{4}$) caused vomiting and vertigo. Subsidence of disease in a few hours; cure complete in one week.

CASE 25.—H. W., æt. 17. Acute scleritis and corneitis. Morphia treatment (gr. $\frac{1}{4}$); subsidence of disease in one week.

CASE 26.—Acute scleritis of a fortnight's duration. Morphia (?) treatment caused acute mercurial symptoms. Reason to suppose an error in dispensing. Recovery by warm fomentations.

CASE 27.—C. W., æt. 30. Acute scleritis and corneitis interstitialis of one eye; no iritis; pain intense; vision limited to distinction of outlines of

objects. Failure of depletion. Morphia treatment (gr. $\frac{1}{4}$); complete cure; perfect restoration of transparency of cornea and of vision.

CASE 28.—M. W., æt. 39. Acute scleritis and conjunctivitis purulenta; duration, one day; great pain. Morphia treatment (gr. $\frac{1}{4}$, increased after six doses to gr. $\frac{1}{3}$.) Argent. nitrat. gr. x. ad $\overline{3}$ i., applied once to conjunctiva. Complete cure in about ten days.

CASE 29.—M. G., æt. 23. Acute scleritis and conjunctivitis mucosa of four days' duration; acute rheumatism for one month previous to disease of eye; acute pain; general œdema of integument of side of face. Morphia treatment (gr. $\frac{1}{4}$); subsidence of disease within twelve hours after second dose.

The following table exhibits the results of the morphia treatment:—

Disease.	Number of cases.	Treatment successful.	Treatment doubtful.	Treatment failed.
Scleritis....	24	19	2	3
Iritis	5	4	0	1
Total.....	29	23	2	4

In 23 out of the 29 cases the treatment was successful, four being cases (cases 3, 7, 20, and 27) in which ordinary treatment (depletion, etc.) had previously failed. In one of the cases of failure (case 26) there was reason to believe in the patient having, through an error of the dispenser, had calomel instead of morphia powders. A perusal of the preceding cases shows remarkable individual differences in the tolerance for morphia. In a few cases it caused violent symptoms of stomach derangement and depression; in others it produced these effects, but in a slight degree; whilst in others it produced, even in large doses (gr. $\frac{1}{3}$), no such effects. The general dose I now give is gr. $\frac{1}{4}$, cautiously increased to gr. $\frac{1}{3}$, or even gr. $\frac{1}{2}$; but in some young or feeble subjects it is better to begin with gr. $\frac{1}{8}$. I direct the patient to take one dose every third hour; but, as the pain becomes less, to increase the interval of the doses to four or five hours, or even to leave off the medicine altogether. I use the degree of pain as the guide in the length of interval. A mercurial purge and tonics may be required at the termination of the case. Conjunctival complications are treated by the local application of nitrate of silver and atropine drops.

These cases I consider to establish an important practical fact, that morphia is, *per se*, a powerful antiphlogistic, capable of curing those acute inflammations of the eye, in which, up to the present time, blood-letting, blistering, and mercurialisation have been considered necessary. As regards loss of blood, all will be agreed on the propriety of dispensing with it where it can be done with safety. Again, how constant an occurrence is it to see paroxysms of acute inflammations for a time apparently relieved by blood-letting, till the subsequent vascular reaction sets in, but to recur again and again, and to require as many repetitions of the same

objectionable remedy? What evidence have we, that, in the combination of mercury and opium with a view of "putting the patient under the influence of mercury," as it is termed, it is not really the *opium* which does the good, and that the mercury and its action on the mouth may not be, to say the least, useless?¹

If we seek for an explanation of the above very remarkable action of morphia in reducing abnormal fulness of the vessels of the sclerotic, we may find it in the relations of pain to vascular congestion. Pain has generally been regarded rather as the effect than as the cause of the repletion of blood-vessels; but it is quite an open question whether or not, in certain classes of cases, the order of things may not be inverted. Such may be the case in the inflammations of the sclerotic we have just been discussing. That, on the other hand, vascular congestion may react as a cause of pain is not improbable. The theory I would submit is, that the action of morphia in these cases depends on its known power of reducing nervous irritability, which may be viewed as the primary cause of the inflammation. In these deep-seated inflammations of the eye this view is very much borne out by the seat of the pain; this will be found to follow strictly the branches of the fifth nerve; indeed, the precision with which the patients themselves localise the pain is very remarkable, whilst we have further evidence of the nervous nature of these cases in the intense watering of the eye (dependent on irritation of the lachrymal branch of the fifth nerve). In this way I conceive the irritation is propagated to the vessels through the intervention of the connexions existing between the fifth and sympathetic nerves.

In instituting such a purely experimental inquiry as the above, it has been necessary not in any way to complicate the treatment; but I am not disposed to ignore in actual practice the occasional value of depletion or counter-irritation; but I must acknowledge my entire scepticism of the "influence of mercury," in the sense in which this term is generally understood. I may further state that now I am convinced of the therapeutic value of my plan of treatment, I generally order the *Liq. opii sedativ* (Battlei) in combination with an effervescing saline. This very rarely produces any of those unpleasant effects which were often noticed when morphia was given alone.

¹ Again, mercury is presumed to have an "absorbing power" over plastic effusions, such as occur in acute iritis: here, too, it is a fair question whether the absorption of the inflammatory exudations is not rather a natural process, supervening on the cessation of the inflammation (such as we daily see in the absorption of divided cataracts after the operation by solution, as soon as the inflammatory consequences of the operation have passed off) than the result of what I may be allowed to style the "mercurial" process.

ARTICLE III.—*Note on the Cumulative Action of Medicines.* By ALEXANDER FLEMING, M.D., Fellow of the Royal College of Physicians, London, and Physician to the Queen's Hospital, Birmingham.

IN my lectures on therapeutics, I have found it useful to the student to describe three modes of exhibiting medicines, in relation to the interval between the doses; the *simple*, where the second dose is not given until the action of the first has completely subsided; the *sustained*, where the doses are repeated at such intervals as to keep up without increase or diminution the required degree of physiological action, as in the use of wine; and, thirdly, the *cumulative*.

Although the term cumulative action is much used, it is often wrongly applied, and its meaning is, at all times, vague and uncertain. It is commonly employed to denote the exhibition of a medicine for some days, in small and repeated doses, without marked effect, when suddenly and unexpectedly violent and, it may be, dangerous symptoms of its action are developed. The successive doses are supposed to remain in some obscure and unexplained way quiescent in the blood, until the so-called cumulative action is manifested. The administration of digitalis and strychnia are cited as affording examples. It is said that digitalis may be given continuously for several days, and apparently without effect, when suddenly a feeble irregular pulse, fainting and cold sweats, usher in the poisonous action of the drug. In like manner, successive pills of strychnia may be taken and remain inert, when unexpectedly and suddenly severe tetanic symptoms supervene.

Now the sudden eruption of alarming symptoms during the continuous use of these medicines can be satisfactorily explained without reference to any mysterious agency. In the case of strychnia there is no cumulative action, but simply an example of the non-solution and retention of the medicine in the stomach and bowels. It is observed only when the medicine is given in pill. This alkaloid is hard of solution in the gastric fluid, and one, two, three, or more pills are apt to remain undissolved and accumulate in the stomach or bowels. Suddenly, from some change in the patient, there is an abundant flow of gastric juice, and all the pills are simultaneously rendered soluble and active. This apparent cumulation of strychnia is never observed when it is given in solution. In the exhibition of digitalis, on the contrary, as I shall presently explain, we have an example of true cumulative action but imperfectly observed and understood.

I think it would be more correct to restrict the term *cumulation*, or *cumulative action*, to denote exclusively the gradual increase of physiological action from the successive exhibition of equal doses. When a second dose is given before the effects of the first have passed away, we add to what remains of the action of the first the

full operation of the second, and so on with the third and subsequent doses until, finally, the sum of effects exceeds the limits of medicinal, and passes into those of poisonous, action.

In the exhibition of mercury, arsenic, aconite, digitalis, and other medicines, we adopt the cumulative mode, because it is safer and more efficient. The tolerance of these medicines varies so much that no physician can say what amount of any one of them is required to produce a given degree of physiological action. He might exceed the proper dose and cause danger. But by the cumulative addition of the effects of successive doses in the manner described, we advance cautiously and safely to the required degree of action, and the symptoms are more under control. The interval between the doses is determined in each medicine by the duration of its action. Between successive doses of mercury it may be twelve or even twenty-four hours, while, to secure the cumulative action of digitalis, it should not exceed four to eight hours. Our knowledge here is imperfect in respect to many drugs, and cannot be reduced to rules.

The cumulative mode of exhibition is most necessary with sedatives, as aconite and digitalis; and in using them the pulse must be carefully observed, for it is an important fact, in connexion with sedation, that the circulation may be lowered to a remarkable degree without the patient being conscious of, or showing any material change in his other functions. But carry the depression just a little further, and the heart's action is suddenly and seriously embarrassed, and the patient has fainting, cold sweats, and a sense of impending dissolution. Now, the early effects on the pulse of the cumulative depression of digitalis are apt to be overlooked, and the belief obtains, as already stated, that the first doses produce no effect whatever; but this is an error. I have often watched the cumulative use both of digitalis and of aconite, and have never failed to detect depression of the circulation from the early doses, and its subsequent gradual increase. I should add that, as a sedative, I am careful to give digitalis; so as to secure its prompt and easy absorption, and to avoid its local irritant effect on the stomach, which complicates the general symptoms of the medicine.

On the other hand, in the administration of atropia and strychnia it is no less important to avoid cumulation. Their use often extends over a considerable time, and it is safer to use the *simple* mode of exhibition, and to give the doses at such intervals that the action of the first has entirely subsided before the second is taken. Nor is there any danger with these drugs in inducing the required degree of medicinal action with one dose, provided its amount be determined by careful trials, commencing with small and advancing gradually to larger doses. For example, I give atropia thus,—10 minims (containing $\frac{1}{60}$ of a grain) of a solution are exhibited once daily, and the dose is increased daily by 2 or 4 minims until I obtain the required degree of atropism. The action of one dose

endures sixteen or eighteen hours, but ceases before the next is given and there is no cumulation, which it is safer to avoid, especially as the use of atropia is often continued for several weeks.

There is another order of physiological effects, sometimes named cumulative, which require notice here. They have been observed to follow the use of alcohol and aconite. I refer to the wakefulness, tremor, and exhaustion (*delirium tremens*), from prolonged excess, symptoms quite different from the ordinary stimulant and narcotic action of spirit, but distinctly traceable to its *continued use*. In the same manner, I have observed in patients who have been taking aconite in full doses for a lengthened period, that ultimately they have become affected with general tremors, severe pain in the head and eyeballs, constant lachrymation, intense photophobia, heat of skin, quick pulse and great restlessness, symptoms which, while very different from the ordinary sedative action of aconite, were clearly attributable to its long-continued employment. In the cases where I noticed these results, the aconite being discontinued, the symptoms, which were by no means alarming, subsided in a day or two. Effects allied in nature to this action have also been traced to tobacco and to mercury.

In my lectures, to prevent the student confounding these effects with cumulation, I found it needful to distinguish them by the name of *sequel* action. At present the study of the sequel action of medicines does not offer much interest in the way of practical application; but it might at a future time acquire more importance. For example, one of the patients who exhibited the sequel action of aconite had been long a confirmed intermittent drunkard. From the time that he presented these symptoms the craving for spirit, previously so irresistible, never returned, and he continued to lead a sober life for at least four years while I knew him. Meantime, it is well not to confound together things essentially distinct. The sequel action is due to the continued exhibition, and is a direct operation of the medicine, and must not itself be confounded with the symptoms which arise from the sudden suspension of a drug, such, for example, as opium, to which the body has become habituated. The extreme nervous prostration and excessive perspiration, urination and diarrhoea, which supervene on the sudden withdrawal of the habitual supply of this narcotic, are a good example of one of the forms of medicinal *reaction*. The cumulative and sequel actions are both phenomena of the forward, the reaction of the backward, swing of the physiological pendulum.

In relation to strychnia, I have already referred to the error of confounding true cumulative action with the accumulation of medicine in the bowels. This evil happens with solid medicines as caustic magnesia, strychnia, and calomel, which require the intervention of the gastro-intestinal secretions for their solution and absorption. If the dose exceed the solvent power of the fluids, or these are deficient in quantity, then a portion or all of the medicine

remains undissolved, and is either expelled quickly by stool or lodges for a time in the bowels. If while there the visceral fluids become more abundant, it may be suddenly dissolved and by its absorption give rise to severe effects. I could cite many examples of this, but I have said enough to make evident the distinction between cumulation and the effects produced by the sudden solution and activity of a solid drug which has accumulated in the bowels.

ARTICLE IV.—*On Non-Interference in Natural Labour.* By JOHN PATERSON, M.R.C.S.E., Aberdeen.

FOR a period of more than thirty years no obstetric fact has made a deeper impression on my mind than the effort which nature makes, under the most adverse circumstances, gradually and successfully to complete her work, so as to ensure the safety of the mother and infant. In no branch of the profession is this more to be observed than in midwifery. It is Nature's greatest work—*life*,—and she is perhaps more jealous here than in any of her other operations, that it should be done well; and it always is so, unless when there is an error on the part of the mother, or when, as more frequently happens, it is impeded by the ignorance or dishonesty of an unprincipled and unskilful midwife or other medical practitioner.

In medical work generally, but particularly in midwifery, I have not always found that strict adherence to truth which might be expected in members of so learned and scientific a body as ours. In no profession ought this virtue to be more valued, especially where the life of a fellow-creature and the happiness of a family are so frequently involved. The young and inexperienced practitioner, naturally disposed to place implicit confidence in those possessed of more practical knowledge than himself, is not seldom deceived by the ignorant, who act and write but to serve selfish purposes; by the illiterate and presuming midwife, who knows no better; but oftener by the grasping and selfish practitioner, whose object is to hasten his case, save time, and thus add to the number of his fees and patients. I believe that the profession has yet to learn how frequently *art* is resorted to, wantonly and unnecessarily, by members high in practice, adding greatly to the mortality of mothers and children. Nature's plain, simple, and safe laws are disregarded, and her lessons to wait, watch, and learn how far she can, unassisted by art, in almost every case, successfully accomplish her work, are often wilfully, nay, almost criminally, neglected.

There is no precept more deeply engraven on our obstetric literature by every writer of authority than this, that *prolonged labour, unaccompanied by dangers arising from other causes, is not a matter of almost any consequence, so far as the safety and permanent recovery of the mother is concerned*; and it has been an apophthegm from the days of Hippocrates till now, that meddling midwifery is bad.

Dr Osborne—than whom we have no greater authority—states, while speaking of difficult and instrumental delivery, that he believes it is confirmed by general observation, that women recover at least as well after long lingering and laborious labour—the duration of which may have been extended to some days—as after the easiest, quickest, and most natural delivery, and my experience leads me to the same conclusion.

In these remarks it is my object to show how far the mortality of mothers and children may be lessened by the course which I have been pursuing during a practice of nearly thirty-five years. It is short, plain, and simple; indeed no great or useful work has ever been accomplished but by the simplest means, and never without much time, patience, and self-sacrifice.

I think it is the duty of every accoucheur to visit his patient more frequently before and after her confinement than is generally done, to make himself intimate with her condition, former habits, and character, and even to become familiar with her peculiarities, for females are never without these, particularly during pregnancy and labour, and to lay down at every stage of pregnancy a clear and distinct course of hygiene, which he should take care to have strictly adhered to, not only up to the time of confinement, but for at least six weeks after it. He should examine personally the *bladder* and *rectum*, and see that they contain nothing that can be obstacles to the labour before its commencement. He should never permit the patient to think that her labour has really commenced till the *os uteri* is nearly the size of a crown-piece. He should have her as seldom in bed as possible, till the child's head is about to escape from the *uterus*. With his own hands he should place the infant at the breast the moment it is dressed, or, if possible, should not leave the apartment till he has seen this done. This is the only safeguard, nothing else will prevent danger from flooding. He must insist on the mother throwing off the afterbirth herself in the same way and by the same means that she bore her child; and if she tells him that she has no pains, he should ask her, at least within twenty minutes after the birth of the infant, to make them, and press down as in labour. I seldom or never put a finger on the *placenta* till it tumbles into my hands. All this must be done by the efforts of the mother alone. The contraction which naturally follows throws off the *placenta*, and if the child is applied immediately thereafter to the breast, the contractile powers of the *uterus*—another name for after-pains—are so much increased, that the *os uteri*, by these means, is effectively closed very soon after the birth of the infant. The *lochia*, from following this treatment, generally disappear in forty-eight hours, and no bad symptoms ever follow. Why should they? Is delivery not purely and simply a work of nature, the farthest possible from disease? It is the work of *life*, not of *death*. By disregarding these rules, and other apparently trifling precautions, the lying-in chamber has been made not

only the abode of disease and death, but has, at the least, cut off every tenth married female by countless maladies, malignant and otherwise, within five years after the end of menstruation. In bringing off abortions I almost always do so successfully by the same means. I never poke for hours at the *os uteri*, producing often inflammation and ending in disease, from which the patient seldom or never thoroughly recovers. Impacted faecal matter in the *rectum*, and a distended *bladder*, are, I believe, in ninety-nine cases out of the hundred, the causes of the loss of the child, and of resorting to instrumental labour, which but too often terminates in the death of the mother, or renders her miserable for life. If the duties I have indicated were properly attended to by the accoucheur himself, and the necessary time and patience were bestowed, what is called protracted labour would be seldom heard of, and most cases would end favourably, unless where there is deformity of the *pelvis*, or some other natural obstacle, which it is impossible to remove.

The following statistical data, derived from nearly three thousand cases, which I have arranged in a tabular form, will present to the reader, in the readiest and shortest way, some points well worthy of his serious attention:—

Presentations and Complications.	Number.	Children still-born.	No. of mothers recovered.
Arm,	7	5	All.
Feet,	31	6	All.
Breech,	42	10	All.
Retained Placenta { with hæmorrhage, 7 } { without do. 9 }	16	0	All.
Twin Births,	26	0	All.
Face to Pubis,	21	2	All.
Face Presented,	4	2	All.
Prolapsus Funis,	4	3	All.
Convulsions,	1	1	All.
Protracted Labour,	14	0	All.
Out of which were, with forceps, 9; } lever, 0, }	9	5	All.

Deaths from independent causes,—from phthisis, 5; from dysentery, 3; and other diseases, 9; total, 17.

Only 3 of these happened before the end of the first month, and 6 of the instrumental cases occurred during the first seven years of my practice. By strict attention to the bowels I have had no case of laceration of the perineum for more than fifteen years.

In the foregoing table it will be seen that there is not recorded the death of a single mother in nearly 3000 cases of labour, unless where it arose from independent causes. Many of the parties were in the middle ranks of life, the wives of respectable workmen, and subject for years past, from the social condition of the country, arising from expensive living, and the difficulty of finding employment, and preserving their status in society, to perhaps more moral, emotional, and physical causes injurious to health than at any former period in the history of the country. Considerably above

a hundred may have been illegitimate cases, most of them connected with decent families, and such are always dangerous, tedious, and difficult to recover. Between three and four hundred were brought up in factories, and many of their parents before them. Among this class there is probably the largest amount of mortality, not excepting the highest circles, and much more than among the very lowest society, who have at least the open air and out-of-door exercise, and, for the most part, less care and anxiety than the class immediately above them. With such an amount of success as this table shows in an artificial state of society, and where nature's laws are so frequently broken, we can the more readily conceive how far nature will make her way under the most disadvantageous circumstances, and also with what ease the females of savage tribes perform this part of the work of nature, in almost as short a period, and with as little pain, as any of the other evacuations. These facts will, I trust, lead other members of the profession to record the results of their practice, if in any way favourable, or else cause them to pause and think whether this branch of our profession has received that attention, or had that justice done it, which, above all others, it so well deserves.

There is room for improvement at home, but more so on the Continent, where instruments are used in every fifth, tenth, fifteenth, or twentieth labour, under the charge of the medical men there, in order to expedite delivery. This is also done by many in this country, whose dangerous doctrines, inculcating the most unjustifiable and uncalled for interference, are injurious alike to mother and child, and are too often followed from the worst and most selfish purposes.

The late Dr Joseph Clarke of Dublin, who was one of the most amiable and upright members of the profession, moving in the highest circles, eminent in his position, who was characterized by a professional friend as a physician without guile, and whose useful life was closed by a Christian death, had, besides the charge of a large inlying institution, 3862 private cases of midwifery, out of which he never lost a mother, and he had only one forceps case, which he failed in completing. If such was the practice of this great and good man, what must we think of those who are seldom weeks without instruments in their hands, and never go a distance from home without having them on their person. Surely there must be something radically, if not criminally wrong, in all this, which even demands some movement on the part of the legislature. The want of practical knowledge in the medical student is another source of the extensive evils from which mothers and children suffer so much during pregnancy and labour. He has never had the opportunity of obtaining anything but a small portion of knowledge in this department before entering into practice. The knowledge which students acquire at most of our schools is not of the kind suited to impart confidence, when, at the outset of their professional

career, they are left entirely to their own resources. Not from any want of perseverance in their teachers, who are most indefatigable in their endeavours to procure cases, but partly from the want of a properly organized system, partly from the state of society in this country the result is that the student is left almost entirely to himself in his search after practical knowledge in this branch of his profession. To pass an examination for M.D. or surgeon, attendance on a few cases of midwifery is all that is required. Hundreds of cases are not sufficient to enable the young practitioner to know when and how to hold his hand from doing mischief, or to give him the confidence sufficient to ensure the safety of his patient, even in a simple and natural labour. In the outset of his professional career he is not therefore altogether to blame, if thrown on his own resources, with little or no practical knowledge, clinging to the theoretical opinions instilled into him by his teachers, without a guide, and with no clear practical data to fall back on, wavering between what he has read in books, his class-room prelections, and his after-experience, he flounder on unsatisfactorily, and is never comfortable in his mind through a long professional life, and never learns to have a decided opinion of his own. A writer alluding to Dr Clarke's practice says, how seldom would practitioners be found to use instruments, if the successful course pursued by this eminent accoucheur were universally aimed at. Is it not worthy of our best consideration, with the invaluable statement before us, that in an extent of practice in the upper ranks of life, perhaps unexampled, there is not a single instance of death resulting from laborious or protracted labour.

In the course of a long professional life, of which the above remarks give a brief and imperfect retrospect, I have learned that neither talent however dazzling, nor genius though of the rarest kind, will alone lead to success in this branch of the profession. Extreme care and attention are necessary; patience unlimited; an almost perfect negation of time, of every selfish feeling and personal comfort, even health itself, must be conceded before the greatest amount of success can be obtained. And thankful ought the humblest member of the profession to be that every upright and faithful practitioner has all these virtues in his own power, however slender his acquirements may otherwise be.

As for myself, after a long and rather laborious professional life, I am well content to admit that I am but a sorry instrumental operator. This, in my opinion, is the highest compliment that an accoucheur can receive; and I trust the time is not far distant when every member of the profession will deem it an honour to avow, not how often, but how seldom, through a long professional life, he has required to resort to instrumental means.

ARTICLE V.—*On Delirium Tremens and its Treatment.* By
WILLIAM PIRRIE, Jun., M.D., Aberdeen.

(Concluded from page 342.)

Ordinary Course.—It was said in an early part of this paper, that for the proper and rational direction of therapeutic measures, it is absolutely necessary to have a proper knowledge of the ordinary course and usual terminations of the diseases we undertake to treat. I shall now, accordingly, proceed to the consideration of the ordinary course of delirium tremens.

Notwithstanding the great diversity of opinion on the pathology and ætiology of the disease, there is a singular uniformity of opinion regarding the ordinary course and issue of the disorder. "The paroxysm," writes Dr Peddie, "usually runs its course, if uncomplicated and properly treated, on the second or third day, though sometimes earlier, and it seldom extends beyond the fifth day. It then terminates in a profound sleep, which may continue for many hours, and from which, if it even lasts for six hours, the patient awakes weak and languid, but quite coherent." According to Dr Bennett, "in the vast majority of cases of delirium tremens, the poison becomes eliminated from the system in a certain time;" and Dr Wood gives it as his experience, that "simple, uncomplicated delirium tremens is not a dangerous disease," and that "it generally subsides spontaneously, and, under proper treatment, almost always ends favourably." The results of my own experience, and of my observation of cases treated by others, lead me firmly to believe that in the great majority of uncomplicated cases, the paroxysm will terminate, in from forty-eight to ninety-six hours, in profound sleep, that the patient will ultimately recover independently of art, and that there is much truth in Dr Laycock's statement, that "the delirium belongs to the class of self-limiting disorders." The multitudes of recoveries which we will presently find have taken place under all kinds of treatment strongly confirm this belief. There is much force I feel sure in the observation of Dr Ware, that "The natural tendency of the paroxysm is to terminate in a spontaneous and salutary sleep at the end of a certain period—in sixty to seventy-two hours; and even in the reports of cases which have been submitted to the public as evidences of the efficacy of various modes of practice, sleep has not actually taken place sooner than it would have done in the natural course of the disease."

Feeling satisfied that the phenomena of delirium tremens are owing to a specific toxæmic action of alcohol, and that the complaint naturally tends to a favourable end, I now proceed to the subject of treatment. In doing so, I would first enumerate the various methods which have been highly advocated and largely followed, then state the difficulties which I have felt, and which may have occurred to others, in reconciling them with rational

practice, and then describe the treatment which my own views of the complaint have suggested, and my experience has warranted.

As far as I can ascertain, the following are the different methods which have been proposed and pursued in the treatment of delirium tremens :—

(1st,) The time was, when the usual routine of treatment in this, as in all diseases supposed to be in any way connected with the inflammatory process, consisted in instituting large bleedings and the antiphlogistic plan of treatment in all its details. The consideration of this mode of treatment need not engage us long. It is sufficient to say that it is now entirely out of vogue, and was founded on the erroneous notion of the decidedly inflammatory nature of the complaint, which was not warranted by the results of the antiphlogistic treatment, nor supported by the appearances observed after death. There are few now who believe in the unequivocally inflammatory nature of delirium tremens, but there are some who consider that there is in this disorder, if not a true meningitis, at least a state bordering closely on it, which contraindicates a stimulant plan of treatment, but is at the same time accompanied with a degree of systemic depression, for which bleeding and other powerful antiphlogistic remedies are altogether unsuitable. Accordingly, those who believe that there is in delirium tremens a certain amount of vascular excitement in the membranes of the brain, strive to counteract it by means less depressing to the system than bleeding, and this leads us to consider—

(2d,) The second mode of treatment advocated for this complaint. This may be said to consist in attempting to reduce the activity of the vascular system by regulated doses of sedative medicines. Dr Graves,¹ although he considered delirium tremens to be independent of inflammation, yet believed it to be accompanied by a certain degree of vascular excitement for which bleeding is dangerous, from its increasing the already existing systemic depression, and opium unsuitable from its tendency to favour congestion. He, therefore, considered that the safest line of conduct lay between the two extremes, and, accordingly, he began by administering tartar emetic, with the intention of producing and maintaining a sedative influence. After doing so for some time, he carefully added a little opium; and gradually increased its amount until, at last, the tartar emetic was entirely dispensed with. Dr Peddie tried this combination for some time, but soon became satisfied that the really useful agent was the tartar emetic, which he had been using with success for some considerable time, before he was aware that Dr Graves had recommended it along with opium, or that Stoll, Klapp, and others, had also advocated its employment. Dr Peddie administered the antimony in doses varying from “one quarter to one half of a grain, in simple solution, every two hours, sometimes at shorter intervals, according to the degree of excitement and irritability.”

¹ Clin. Med., vol. i. p. 529.

This plan of treatment, which has subsequently been favourably mentioned by numerous writers on the disease, is suggested by the belief, as we have already hinted, that the brain is in a state of vascular excitement, that the symptoms of the disorder are indicative of exalted action, and that the great indication for treatment is to subdue this vascular excitement, to diminish the activity of the muscular system, and to induce nervous exhaustion and mental languor. For this end, tartar emetic is given in doses sufficient to maintain a sedative action; and it is considered to act beneficially, not by forcing on sleep, but by removing all obstacles or hindrances to its occurrence.

If we believe that there always occurs in delirium tremens; if not a real meningitis, at least a condition of the membranes closely bordering on it, this is a most rational method of treatment. But I do not think that the changes described as having been seen on the few opportunities which have occurred of examining the head in unmixed cases, are sufficient to warrant our ascribing the symptoms to vascular excitement; and it ought to be carefully borne in mind, that conditions very similar have been often found in the cerebral membranes of confirmed drunkards who never suffered from delirium tremens; and also that in cases of undoubted cerebral depression, a certain amount of serum is often found in the cavities of the brain. We must also remember that very opposite states of the brain are sometimes accompanied by a series of phenomena in many respects closely similar. Thus, every one must confess that when children's nervous powers are exhausted by long-continued diarrhoea or other debilitating complaints, a train of head symptoms often appears, which, without careful scrutiny, might be easily mistaken for advanced meningeal inflammation. But I have never been able to reconcile the symptoms themselves with a condition of the membranes approaching to inflammation, so different are they from those which characterize that condition under any other circumstances. There is not in delirium tremens the heat of head, the contraction of the pupil (unless when opium has been used), the same amount or persistency of conjunctival suffusion, the characteristic vomiting, or the usual intolerance of light, which are some of the most marked indications of intra-cranial inflammation. The mental disturbance is also quite different. The delirium is of a busy, chattering character, and not wild and furious; the patient is one moment wandering, and the next recalled to reason; and the mind is filled with apprehension and terror rather than with daring. We also miss in this disease the more violent muscular convulsions, and the full, hard, and frequent pulse which characterize an attack of real meningitis. I believe that delirium tremens very rarely occurs until those changes and degenerations previously referred to occur in the blood or in one or more important organs. In examining the state of the heart in cases which I have had the opportunity of watching, I have almost invariably found that its action is decid-

edly below the healthy standard, that the impulse is frequent, but feeble, and that the systolic sound is usually very faint. The pulse, accordingly, is most commonly frequent, but feeble, with varying degrees of smallness. I believe that in many cases there is more or less fatty change in the muscular tissue of the heart, a condition demanding great caution in the use of strong sedative medicines. But it may be said that the results of extensive trials of this mode of treatment amply justify the encomiums which have been passed upon it. Now it is doubtless true that numerous recoveries have taken place under the use of sedatives, but it is equally true that hosts of recoveries have been recorded under all methods of treatment; and it is a most difficult matter to decide, in determining the value of any medicine, how much of the cure is really owing to art, and how much is due to nature.

Very recently one of our most powerful sedative medicines was recommended for the treatment of the disease, and the result of numerous trials shows that the drug operates on the system in a very different way, when given in very large doses, from what might have been expected, considering the effects it produces when given in smaller quantities. Mr G. M. Jones of Jersey, in a communication to the *Medical Times and Gazette*,¹ about two years ago, recommended the use of tincture of digitalis, in doses of half an ounce to commence with. The tincture is repeated in the same quantity or in smaller amount, and at intervals which are determined by the particular circumstances of each case. Mr Jones deprecates the use of small doses as being of no service, and as often causing intermission of the pulse; whereas, in the large doses he recommends, he says a feeble and intermitting pulse often gains in strength and regularity, the perspirations pass off, the skin becomes warmer, and sleep is induced. This powerful medicine had been used in very large doses prior to the trial made of it by Mr Jones in delirium tremens, for Dr Pereira mentions that Mr King of Saxmundham gave it in quantities of half an ounce or an ounce in the treatment of acute inflammation; Dr A. L. Pierson,² after bleeding, gave sixty drops every three hours in delirium tremens, and the patient got well; and it was also given in equally large proportions many years ago for warding off epileptic fits. Some who have tried it since Mr Jones's recommendation have been satisfied, whilst others have been disappointed; and a few have reported very unfavourably of its effects. How to explain the salutary effects ascribed to its use I am utterly at a loss, more particularly as I have observed in the cases illustrative of its employment, that the renal secretions are said to be in no way increased by it. I do not think that the comparatively few records we as yet possess regarding its influence on the disorder, are sufficient to warrant our accepting the opinion which has been expressed, that digitalis and alcohol are mutually antidotal substances. It is clear that

¹ Sept. 29, 1860.

² Copland's Dict. of Pract. Med., vol. i. p. 503.

further observation and experiment are necessary for the attainment of more exact views of the physiological actions of digitalis, and of the particular influence it exerts over delirium tremens.

(3*d*.) The third method of treatment to which I would allude, is that by the exhibition of powerful emetics. This practice originated in the impression that the cerebral disturbance was symptomatic of gastric disorder; that derangement of the stomach preceded the mental affection, and that the latter frequently terminated on the occurrence of copious vomiting. Acting on this belief, Dr Klapp administered tartar emetic in large doses for the sake of its emetic properties, and he states that sleep follows with great certainty after the exhaustion consequent on forced vomiting. Some have stated that the tartrate of antimony was decidedly beneficial, when given to the enormous extent of from four to seven grains an hour. Unfortunately, this plan of treatment, though highly advocated by some, is not warranted by the experience of others who have given it a trial. Moreover, we have good reason to believe that the practice arose from a partial observation of facts; that the occurrence of vomiting prior to the paroxysm is accidental, and by no means constant; and that the salutary change said to follow its occurrence after the accession of the cerebral disturbance is equally uncertain. It appears to me that the whole train of symptoms characterizing the disorder contra-indicates such severe treatment; that by it we run a great risk of hurrying on asthenia, which is the most frequent mode of dying in the disease; and also incur great danger of favouring cerebral congestion and its consequences, which are by no means rare casualties of the disease.

(4*th*.) I now proceed to the consideration of a fourth method of treatment, which consists in the free exhibition of some alcoholic liquor, and is perhaps the most generally adopted practice of all. Great success is said to have followed its employment, and one great authority (Dr Wood of Pennsylvania), speaking of the relative merits of different plans of treatment, says,¹ "The most successful, so far as regards immediate results, is probably the purely stimulant plan, as advocated by Dr Gerhard." By it the proportion of deaths in the Philadelphia Hospital was reduced from one in eight to one in about thirty-three. The only theory which gives this conduct even the semblance of rational treatment is, that the brain, from prolonged indulgence in alcoholic liquors, has become habituated to a state of unnatural excitement, which in course of time becomes necessary for the discharge of its ordinary functions; that the phenomena of delirium tremens arise from the sudden withdrawal of the stimulus; and that, therefore, the proper way to terminate the paroxysm is to administer the accustomed stimulus till that degree of excitement is reproduced to which the brain had accustomed itself, and which had become requisite for the discharge of its functions.

¹ Pract. of Med., vol. ii. p. 745

We have already seen that the assertion that the withdrawal of the stimulus is the exciting cause of the paroxysm rests on insufficient grounds; that careful inquiry into the history of individual cases will discover the continuance of drinking up to the period of seizure, or until the occurrence of some additional disturbance to the nervous system, which I have said hurries on, but does not originate the disorder; that numerous confirmed drunkards conform all at once to habits of temperance without any seizure; and that the history of our prisons convincingly proves that the sudden stoppage of the accustomed stimulus from the prisoners does not induce the complaint, even in those who, up to the date of committal, had been frightfully given to drinking. But again, supposing we grant that the disorder consists merely in nervous exhaustion or irritation consequent on excessive stimulation, I fail to see how the further administration of alcohol, at once the predisposing and exciting cause of the disease, can at all be considered a rational plan of treatment. The pathognomonic symptoms of delirium tremens never appear until the system is fully alcoholised, thoroughly saturated with alcohol, and never until the alcohol has ceased to exert its primary healthy excitant influence, and become, by accumulation, the direct means of maintaining a state of decided depression. Leaving out of view for the present the condition of the system subsequently to the occurrence of a paroxysm, we ought reasonably to expect that the disease would most frequently appear in constitutions naturally impressible and irritable, if the theory be correct that it consists in simple nervous exhaustion and irritation, and has no connexion with a vitiated nutrition. But what do we find to be the case? It is a remarkable fact, unquestionably established by the experience of those who have had very large fields for studying the disorder in all its phases, that women, who have naturally a much more excitable and movable constitution, are markedly less liable to the complaint than men, although they lay themselves equally under its cause. Dr Magnus Huss, the great authority on alcoholism, gives as the result of his experience, that nervous temperaments are able to bear up under the abuse of alcohol for a longer period than sanguine temperaments. But it may be said that, whether the theory as to the nature of the disease be correct or not, we have sufficient encouragement to pursue the stimulating plan, from the influence exerted on the sufferer's condition by the further exhibition of his favourite liquor. There is only one way in which any single therapeutic element can justly be deemed a valuable agent in the cure of delirium tremens, and that is by producing some decidedly beneficial change before the ordinary course of the disease is run. We have seen that this is a disorder which generally lasts from two to four days, and spontaneously tends towards recovery; and we cannot consider any therapeutic element of much value which requires to be repeated over and over again before any decided amelioration takes place.

After watching the stimulating plan of treatment pursued by others, and after carefully noting its effects in cases under my own charge, I cannot say I ever saw an instance in which speedy improvement followed its adoption, or one in which any marked alteration for the better was distinctly referable to its employment. Many have written in favour of the practice, and many more have put it in force, but a continuance in it is not warranted by the experience of others who have had unusually large spheres of observation, and enjoyed the means of arriving at a correct understanding of its real value. According to Dr Carter,¹ "the accustomed stimuli should be withdrawn without hesitation; neither wine, nor spirits, nor strong malt liquor should be allowed at all." "I may plead," writes Dr Peddie, "the experience of upwards of fifteen years, and state that the frequent sudden fatalities which I witnessed from arachnitis, convulsions, and coma, when stimulants and opiates were freely administered, and the length of time ere recovery took place, even in the most favourable instances of the malady, when these agents were given more sparingly and cautiously, long since convinced me that their tendency is highly dangerous." A similar opinion is entertained by Dr W. T. Gairdner,² who says, in referring to the use of stimulants, "So far from having had constantly before me the fear of sacrificing life by diminishing or withdrawing a habitual allowance of stimulants, I have made it part of my regular practice to do so in most cases of persons accustomed to the use of ardent spirits in excess, and especially in many cases of delirium tremens, or of other acute diseases modified by alcoholic excesses; and though not committed to the treatment of any disease entirely without stimulants, I can entirely corroborate the remarkable statements made by Dr Peddie in his very important memoir on delirium tremens,—viz., that the suppression of the habitual allowance is not, *per se*, dangerous in most cases, but, on the contrary, extremely conducive to the cure." Dr Ware, Dr Wright, Dr Craigie, and other great authorities, are equally opposed to the use of spirits in delirium tremens.

Those who support the theory of nervous exhaustion, admit that intra-cranial inflammation, congestion, and coma, are not unfrequent accidents of the disease; and therefore it is necessary carefully to bear in mind that alcohol may be potent for evil, if not for good. If there is, as some suppose, an abnormal vascular excitement in the cerebral meninges, it is evident that the exhibition of alcohol, by arousing the nervous force and increasing the strength of the circulation, must favour the passing of this meningeal irritation or excitement into decided inflammation.

Lastly, I may say that the treatment of delirium tremens by the continuous exhibition of spirits, is not in conformity with the theory I entertain as to the nature of the disease. If we believe that the disorder results from a specific poisoning, that the blood

¹ Cyc. Pract. Med., vol. i. p. 504.

² Edin. Med. Jour., May 1861.

is impure and impoverished from prolonged abstinence from proper food, that those changes originate solely in the excessive use of alcoholic liquors, and that they take place on the principle of accumulation, it follows as a legitimate corollary, that any further administration of spirits is merely feeding the disorder,—and must be a sure method of increasing both the severity and duration of the complaint. It is strange that many act on a principle, in the treatment of delirium tremens, which they seem to consider applicable to it alone, and would deem it madness to adopt in cases which are really precisely analogous. There are not wanting those who look upon delirium tremens as a specific form of nervine poisoning, and yet do not hesitate to resort to the use of spirits for its relief. If it be rational practice to attempt to remove the poisonous effects of alcohol by a further continuance in its use, why not with equal propriety undertake the relief of mercurialism by a continued exhibition of mercury, of plumbism by enforcing a constant abiding under the circumstances in which it was contracted, and of rheumatic fever or uræmia by furthering the continuance in the blood of the poisonous ingredients on which these disorders respectively depend. But we have dwelt long enough on the consideration of the purely stimulant plan of treatment, and we would now pass on to a

(5th,) Fifth,—viz., the administration of large and frequently repeated doses of opium, which by many is considered an indispensable remedy for the cure of delirium tremens. This powerful narcotic has been given with the view of fulfilling two separate and distinct indications. Some, who object to the use of alcohol on physiological or moral grounds, resort to the use of opium in the belief of its acting as a simple stimulus to the system, and in the hope of its preventing the failure of the nervous powers, and of its relieving the brain and soothing the system, until the ordinary course of the disease is run, and sleep returns in the natural way. Thus Dr Wood,¹ after stating his objections to the use of spirits, writes: “It is highly desirable to find some other stimulus, which may be sufficient to support the nervous system during the continuance of the disease, etc. Happily such a stimulus we have in opium. It affords a gentle support to the brain, quiets nervous disturbance, favours the return of sleep, etc.” He then goes on to remark, that “The object is not to force sleep at all events. It is not to pour in the narcotic in such quantities as completely to overwhelm the brain, and, if sound sleep cannot be induced, at least to bring about a state of coma. It is sufficient for the object to keep the patient moderately under the influence of the narcotic, so as to prevent his nervous powers from failing, and patiently to wait till the disease ceases in its ordinary course, and sound sleep returns.” In detailing his treatment, he says, “Two grains of opium, half a grain of sulphate of morphia, or an equivalent quantity of one of

¹ Loc. cit., p. 743.

the liquid preparations of the drug, are given every two hours, and steadily persevered in, until sleep takes place, or a decided narcotic impression is evinced. This quantity is seldom exceeded. When, after one or two doses, the patient is found very susceptible to the influence of the narcotic, the intervals should be lengthened to three or four hours or more, or the quantity diminished. Upon his awaking from the first sleep, should the least tendency to hallucinations remain or return, the medicine is to be given in quantities sufficient to control the tendency, and to be gradually diminished or omitted as the occasion for its use lessens or ceases." My own experience of the moderate use of opium in delirium tremens is, that it increases the sufferer's agitation, and that it strengthens rather than dissipates his hallucinations. If a state of quiet is obtained, and apparent sleep is induced, I have good reason to believe that more or less decided coma is too often mistaken for proper sleep; and I have generally remarked that the patient rallies from the stupor following the use of opium unrefreshed and disquieted, and speedily relapses into delirium as confirmed as before. It must be a most difficult matter to administer opium in this disease so as to afford support to the system, and yet stop short of inducing a more or less decidedly narcotic effect. Moreover, the quantities given by those who use it for the end just named, are really sufficient to induce congestion of the cerebral vessels, and a certain amount of compression and coma. Others, again, believing that the one grand indication in the treatment of the complaint is to obtain sleep, have recommended the employment of opium in large doses for the purpose of forcing on this much desired state. "The great remedy," writes Dr Watson, "in delirium tremens is sleep; and our most powerful means of inducing sleep are to be found in opium. The opium must be given in full doses, and it must be fearlessly repeated if its desired effects do not soon follow. After clearing out the bowels by a moderate purgative, you may give three grains of solid opium; and if the patient show no inclination to sleep after two or three hours have elapsed, you may begin to give one grain every hour till he does sleep." In Dr Copland's opinion,¹ opium is "as necessary to the cure of this disease, as bark and analogous medicines are to the cure of ague," although he strongly condemns the ordinary practice of giving it in very large and frequently repeated doses. Dr Dickson² tells us that he gives "a teaspoonful of laudanum every hour in ordinary cases, until sleep is induced," and many other physicians recommend its employment in the most heroic doses.

One feels almost afraid to say a word against the opium plan of treatment, so many and so high are the authorities who have spoken in its favour; but the proceeding appears to me to be a directing of means against effects without a proper reference to their cause, and to be precisely the same as if we attempted

¹ Dict. of Pract. Med., vol. i. p. 502.

² Elements of Medicine, p. 655.

to reduce an inflammation of the conjunctiva, and neglected the removal of the offending particle of dust; or as if we directed our efforts in a case of arsenical poisoning to relieve the vomiting, and overlooked the necessity of neutralizing the poison. One chief cause, I am inclined to think, of the great popularity of the opium plan of treatment, is an imperfect knowledge of the natural course of delirium tremens, and a want of due care in observing the exact time at which the much-desired sleep occurs. It is a most common, and doubtless true remark, that "the patient must sleep or die;" and there is an equally prevalent notion that no amelioration of state can take place till sleep occurs, and that this sleep is the entire cause of the favourable change in the patient's condition. The two events are certainly inseparably connected, the one following immediately in the train of the other; but then the question comes to be, which was the first of the two in the order of occurrence; and before we can arrive at any truthful conclusion as to the value of opium in curing the disease, we must carefully note how long the medicine required to be given, at what period of the complaint it was first prescribed, and at what period in each particular case sleep occurred. In cases which I have had under my own care and in which I have carefully watched the effects of opium, in those I have seen treated by others with this medicine, and in the records of cases given in illustration of its usefulness, I have never observed or read of any salutary change taking place till after repeated doses, each of which greatly exceeded what we would venture to give under any other circumstances. The real history of these cases is, that a very powerful dose is commenced with, a second is soon found necessary, another and another are given, and at last sleep comes on, but really not before the period at which it would have occurred in the natural course of the disease. From numerous opportunities of watching the effects of opium, I feel satisfied that if given in ordinary doses, it increases the patient's agitation and delirium, and is really preventive of sleep; and I feel convinced that the system withstands the soothing properties of the medicine, though given in doses sufficient under any other circumstances to produce the most profound sleep, until the paroxysm terminates in the natural way. We are as yet in want of sufficient proof that opium accelerates the occurrence of sleep, that it in any degree shortens the duration of the paroxysm, or that it in any way quiets the sufferer, until it is given to an extent really sufficient to occasion more or less coma. This leads me to express the fear that, when rest, quiet, and insensibility have followed this heroic use of opium, we may sometimes have been guilty, from want of due scrutiny, of mistaking the stupor of coma for the repose of sleep.

But, it may be said, if it does not shorten the disorder or accelerate sleep, it enables the system to bear up until it has run its course. If opium succeeded in arresting the muscular tremors, in dispelling the hallucinations, and in hastening sleep, it might truly be called

a useful support to the system, but this, unfortunately, has never happened in my experience. Dose after dose requires to be given, and no abatement of muscular tremor or of the hallucinations takes place, until a quantity is given sufficient to produce more or less decidedly toxic effects. But, again, the theory we entertain on the nature of delirium tremens, and our past experience, forbid the use of opium, from its tendency to diminish the various secretions (with the exception, it may be, of the perspiration), from its exerting a dangerous influence in large doses over the intellectual faculties, from its inability in moderate doses to control the disorder, from its favouring congestion and coma, and from its disordering the stomach and blunting the appetite, and so preventing the taking of food (a special indication of treatment) so soon as might have been the case had it not been prescribed.

Finally, although many and great authorities strongly advocate the employment of opium, there is far from unanimity of opinion on the point, for many who are deserving of the highest regard, and who have had large experience of the disease, strongly argue against its use. Dr Morehead, in referring to the opium plan of treatment, tells us, that "a greater number thus treated terminate by convulsions and coma;" and Dr Bennett, in speaking of the value of sleep, says, "opium has been largely given to obtain this result, but it is much to be doubted whether its supposed beneficial action is not dependent on coincidence with the muscular fatigue and exhaustion which, with the tendency to repose, accompanies the elimination of the alcoholic poison." "I have no hesitation," writes Dr Peddie, in saying, "that in a large proportion of instances sleep would take place spontaneously at an earlier period, and the subsequent condition of the patient be much more sound and safe, by doing nothing at all, than by the use of opiates. It is evident, that if opium be used at all in delirium tremens, it must be given in a large dose (in from two to three or more grains, and repeated at intervals of a few hours); and it is thus generally given, the object being to overstep the stage of excitement, and force on the desired sleep. Now the acknowledged effect of a large opiate on the encephalon is to occasion engorgement of the vessels, more especially of the veins, and consequently, the larger the dose, the greater will be the amount of sanguineous compression of the brain. What then must be the probable result in a disease in which there is already, if not an approach to arachnitis, at least a very excited action of the meninges, and a preternatural loading of the vessels generally? The practice is one of the utmost hazard." These remarks apply to opium whatever be the form in which it is administered; whether in the form of enema as advocated by Dupuytren, when any contra-indication existed to giving it by the mouth; or of injection into the subcutaneous cellular tissue, as has been tried by Dr W. Ogle, in this disease.

Drs Macpherson, Laycock, Law, Cahill, and others, also testify

to the use of opium being either unnecessary or injurious in the treatment of delirium tremens, so that it is clearly manifest that the high value attached to it by some in this complaint, is far from warranted by the experience of many other high authorities.

Perhaps the favourite way of treating the disease in this country is by a combination of opium and alcoholic liquors. "If a man," says Mr Phillips,¹ "has been accustomed to drink largely of malt liquor, a drachm of laudanum will act much more beneficially if taken in a pint or pot of beer, than if taken alone. A similar remark may be applied to other spirituous liquors; and in other cases its effects would be most certainly enhanced if it were, as soon as practicable, associated with animal food." According to Dr Billing,² "the only mode of remedy is by narcotics and stimulants; by which, in addition to the counteraction of the sedative state, a greater tendency to sleep is produced." Dr Cullen,³ in speaking of the value of opium in inducing sleep, says that it frequently fails to produce this effect in "habitual and enervated drunkards, and where the disease has followed the disuse of the usual quantity of stimulus, unless combined with some of the diffusible stimuli. In such cases, a moderate allowance of the accustomed stimulus in the form of wine, brandy, or malt liquor, as circumstances may point out, is sometimes attended with marked good effect in diminishing the restlessness, tremors, and other urgent symptoms." "Opium," says Dr Armstrong,⁴ "is the main remedy, and good mutton broth, or beef-tea, is the best diet; with a tolerable quantity of good malt liquor as common drink;" and Dr Watson advises us to "put their opiate dose into a glass of gin or pint of porter." It has always appeared to me to be a most extraordinary proceeding to employ at one and the same time two substances, one of which is intended to soothe and calm the system, and the other is professedly given to stimulate and exalt it; but there is no use to enter into any argument against this mode of practice, because, if we have shown that alcoholic spirits and opium, when employed singly in the treatment of the malady, are each unwarranted both by theory and by experience, it necessarily follows that their combination must be doubly injurious. Notwithstanding the general countenance given to the practice, there are not wanting many physicians of great experience and high standing, who have long felt thoroughly dissatisfied with it, and have recorded their opinions to that effect. Dr Peddie tells us, "The frequent sudden fatalities which I witnessed from arachnitis, convulsions, and coma, when stimulants and opiates were freely administered, and the length of time ere recovery took place, even in the most favourable instances of the malady, when these agents were given more sparingly and cautiously, long since convinced me that their tendency is highly dangerous;" and Dr More-

¹ Ranking's Abstract, vol. v. 1847.

² Princip. of Med., p. 206.

³ Lect. on Acute and Chronic Diseases, p. 376.

⁴ Pract. of Physic, vol. ii. p. 403.

head says, "I can say nothing of the treatment of delirium tremens by free opiates and stimulants in temperate climates, but I feel myself satisfied in very positively asserting, that in the delirium tremens of Europeans in Bombay, it is a course of treatment attended with much hazard, and which, when systematically followed, is certain of leading to unfortunate results." Many other quotations expressing like views might be given, but these will suffice, as we must now hurry on to a cursory notice of the

(6th and 7th.) Next two methods of treating the disease,—viz., the expectant and the eclectic. I prefer to speak of both these methods together, because both have been recommended and followed by the same physicians, their choice on each occasion being determined by the particular circumstances of each individual case. They have been followed out alike by those who consider an attack of delirium tremens to be the immediate result of refrainment, and by others who believe that the paroxysm is in no way owing to suspension of the habitual stimulus. Dr Dunglison of Philadelphia, believing that the nervous disturbance results from the withdrawal of an accustomed stimulus, but that the recuperative powers are generally sufficient to re-establish the healthy balance, was wont to treat his cases without either excitants proper or opiates. In some instances he adopted a purely eclectic, and in other instances an expectant plan of treatment. Sometimes, if the patient was suffering from the immediate effects of a debauch, and no counter-indication existed, an emetic was given; gentle laxatives were administered from time to time, nutritious and easily-digested food was enjoined, and too much light as well as noise were prohibited. At other times a strictly expectant practice was pursued. In the third edition of his *Practice of Physic* he informs us, that of thirty-two cases, eighteen of which were classed as intoxication, not one died; although the treatment was eclectic or expectant, and did not include a drop of spirits.

Dr Laycock, who holds that the outburst of the paroxysm is in no way owing to the withdrawal of the ordinary stimulus, advocates the expectant or the eclectic plan as the really rational method of treatment; and he gives as his experience, that of twenty-four cases admitted under his care in 1857, and of four private ones, one only was fatal which was treated with opium and alcoholic stimulants. Dr Wood¹ states that the treatment pursued by Dr Kuhn of Philadelphia consisted "in confining the patient in a dark cell, and leaving the disease spontaneously to work itself off;" and Dr Ware² states that he is satisfied "that in cases of delirium tremens, the patient, so far as the paroxysm alone is concerned, should be left to the resources of his own system, particularly that no attempt should be made to force sleep by any of the remedies which are usually supposed to have that tendency." The same plan has also been followed by Calmiel and others; but a sufficient number have been

¹ Pract. of Med., vol. i. p. 746.

² Ranking's Abstract, vol. v. p. 20.

mentioned to show that this mode of practice, like every other that has been previously noticed, has many and great supporters.

From a review of all that has been said on the subject of delirium tremens and of its treatment, we gather the important facts that there is no unanimity of opinion as to the exact import of any one symptom of the disorder, that physicians are entirely divided on the subject of its ætiology, that the most conflicting accounts have been given of its pathology, that the most contrary modes of treatment have been advocated and adopted, and that any one of these various plans could be favourably illustrated by the experience of some, though not of other practitioners. The force of this last remark will at once be seen by a glance at the following brief statistical table:—

By purely stimulant plan in the Philadelphia Hospital, ¹ . . .	}	Proportion of Deaths reduced from 1 in 8 to 1 in 33.		
Treatment by opium and alcoholic drinks in Edinburgh Royal Infirmary during three years and quarter, ² . . .		Cases admitted.	Deaths.	Proportion.
		403.	101.	25 per cent.
Tartar emetic in sedative doses, by Dr Peddie, ³	}	Cases treated.	Results.	
		Upwards of 80.	Uniform success.	
Large doses of digitalis, by Mr Jones, ⁴	}	Cases in which it alone was used.	Results.	
		67.	1 died.	
Eclectic or expectant plan, Dr Laycock, ⁵	}	Cases.	Results.	
		28.	1 died from using opium and stimulants.	

It is quite apparent that the profession in general are quite dissatisfied with the limited influence they can yet boast of over the disease; and the continual trial of new plans, and the eager hunt after new remedies, clearly indicate the belief that more might be effected than can yet be said to be the case. Considering the utterly conflicting nature of the opinions entertained on every point connected with the disease, and considering the many plans of treatment proposed, and the discrepant results attributed to each by different practitioners, it must be desirable that all who have had any opportunities of familiarizing themselves with the disorder should state their views as to its nature and proper management, so that from the experiences and opinions of many, some rules of conduct might be divulged which would be generally applicable to the treatment of the disease.

I cannot myself discover in the complaint any indications of vascular excitement approaching to inflammation, neither can I look upon it as simple nervous exhaustion, nor as a chain of phenomena symptomatic of simple gastric derangement. I am, therefore, entirely opposed to venesection and to regular antiphlogistic treatment, and have not been able to see, on the grounds either of theory or of

¹ Wood's Pract. Physic, vol. ii. p. 745.

² Brit. and For. Rev., No. 48, p. 378.

³ Loc. cit., p. 506.

⁴ Braithwaite's Retrospect, vol. xlii. p. 62.

⁵ Brit. and For. Rev., No. 48, p. 378.

experience, the particular call for sedative medicines. I cannot but confess that to me the use of stimulants and opiates appears unsupported by experience, and not warranted by theory; and from the views I myself entertain, I think that a step further might be taken in the way of treatment than is expressed in the writings of those who have made favourable mention of the expectant and eclectic plans. The expectant plan of course implies that little or nothing is done which could in any way influence the complaint; but the term eclectic implies the possibility of all kinds of treatment being tried at some time or another, though not in the routine way in which each of them is carried out by its warmest supporters.

I believe that the disease is a specific form of nervine poisoning, of which alcohol is at once the predisposing and the exciting cause; that the blood is poisoned by alcohol either unchanged or combined with some material generated in the system; that the blood is rendered perfectly unfitted for the proper nutrition of the brain by long want of proper food, and by the retention of numerous matters which, in a state of health, are at once excreted either unchanged or after undergoing some metamorphosis; and that, therefore, the proper indications for treatment are, not to trust entirely to nature, or to treat some accompanying disorder, but at once to cut off any further supply of the poisonous substance by which the blood is infected, to neutralize (if it be possible), or to counteract the influence of that which has already gained admission into the system; to strive by all means to get nourishing food administered; to take proper measures for the thorough depuration of the blood and the elimination from the system of the many effete matters with which we have seen that it is crowded, by means not depressing to the vital powers, or calculated to favour cerebral congestion; and to obviate the tendency observed to death.

I have already said so much with regard to the sudden withdrawal of the favourite stimulus, that it is altogether unnecessary again to revert to the subject. But the mere prevention of any further admission of the toxic agent into the system is not the great end of treatment in other forms of poisoning, and I cannot see why it should be so in the case in question. It is no argument against our proceeding a step further, to say that the disease so often recovers of itself. I readily grant this, but I may at the same time state that measles and scarlatina very frequently recover of themselves, and yet there are few who do not take some steps to eliminate the poisons of these diseases from the system. The next question, therefore, comes to be, do we possess any immediate antidote to the poisonous effects of alcohol? Opium and belladonna are said to have mutually antidotal properties; and some have claimed for digitalis the virtues of an antidote to the poisonous influence of alcohol. This, however, is a hasty and unsound conclusion, unwarranted by the most favourable of the cases recorded in illustration of the good services of digitalis, and altogether negatived

by the experience of others who have given it a trial. We as yet know of no substance which can at once restore the sufferer from delirium tremens to soundness of mind or body, and it does not appear very rational to expect such a sudden change in this disorder when we reflect that, whether alcohol itself exists in the blood free or combined, yet that fluid has been rendered highly poisonous and quite unfitted for healthy nutrition by the accumulation in it of numerous effete matters, owing to the prevention, by the alcohol, of those changes necessary for their removal from the system. It naturally follows from what has been said, that we cannot look for much improvement in the condition of the sufferer, until his blood has been freed to a certain extent of these noxious ingredients, and made richer in quality by the persevering exhibition of proper food, and so rendered more suited for the purposes of nutrition. I therefore think that an important and easily fulfilled indication in every case, is to help the depuration of the blood and the support of the system by the natural stimulus of nourishing food. In every blood disorder we can see more or less decided marks of natural eliminative efforts, or attempts to cast out of the system that by which its healthy nutrition has been prevented. Thus, in scarlatina and in rheumatic fever we see in the state of the skin a natural effort to get rid of the poison; and I look upon the profuse perspiration in delirium tremens, not as the mere result of excessive muscular action, but as one of the natural means by which the depuration of the blood is affected. The body during the whole paroxysm is more or less covered with sweat; but we may often observe in cases with a favourable termination that, after sound sleep has been established for some time, a remarkably profuse sweat breaks out, and the patient lies for a considerable time literally bathed in it. In all cases, therefore, I deem it of importance to maintain a proper temperature, and to encourage free action of the skin. When the cutaneous surface is warm and moist, we need not interfere; but if the temperature becomes decidedly low, and more especially if, along with this, there be a decided diminution or arrest of the cutaneous exhalation, the use of stimulating diaphoretics is clearly indicated. Of all this class of medicines, I think a combination of camphor and ammonia is most suitable, both on account of its decided influence over the cutaneous secretion, and also from its diminishing the excessive acidity I have so often observed in the complaint; from its power of exciting and strengthening the enfeebled circulation; from its affording a distinct fillip to the nervous system without inducing subsequent depression; and from its exerting no influence over the intellectual faculties.

The depuration of the blood may be further promoted by arousing with suitable medicines the hepatic and other secretions, which are more or less retained both prior to, and during the paroxysm. The kidneys afford one of the best channels for the elimination of the effete materials accumulated in the blood; and these organs are easily

incited to increased energy by any of our common unirritating saline diuretics, with or without ammonia, according to the degree of asthenia manifested in each particular case. Throughout the whole period of treatment strong broths or beef-tea should be regularly administered; and exhaustion counteracted by this, the best, because the natural form of support.

The eliminative and supporting plan then is the one which a careful study of the symptoms, pathology, and course of the disease, have suggested to me as the most likely to further the natural method of cure, and the one which, by its depurative and derivative, but not debilitating character, is most calculated to avert convulsions, coma, and the other not unusual accidents of the disease. There are just two other points to which I would refer before drawing my remarks on the treatment of uncomplicated delirium tremens to a close. In all cases, I think it a useful measure to maintain the application of cold to the head as steadily as circumstances will admit, and to endeavour, without resorting to violence, to restrain the movements of the patient as much as possible. Here again a directly opposite plan has been recommended and favourably illustrated. Dr Blake, while in the West Indies, found that attacks of delirium tremens were effectually averted by giving proper nourishment and by enforcing "walking drill," which was supposed to do good not as a change of stimulus, but by exerting an exhausting and eliminating effect; and Dr Cahill mentions cases in which sleep ensued after fatiguing drives enjoined as a part of treatment. Some have advocated freedom of bodily movement, on the plea that the patient expends much more strength in trying to free himself from his attendants, than when allowed to walk about at pleasure in a properly secured apartment, or under the care of a constant attendant. I have always made it a point to have the sufferer strictly confined to bed, and have never had any difficulty in carrying it out without resorting to the slightest violence. All that is required is to get a sufficient number of the patient's relatives or most intimate acquaintances to undertake the task for allotted periods; and I have always found that the patient comes to submit, without struggling, to their gentle restraint, although such would not have been the case with perfect strangers. If it be possible to restrain the patient without displeasing him, it follows that much exhaustion may be avoided, and a better chance given to other medicines to act satisfactorily. It has always appeared to me a most strange thing, that they who employ opium and alcoholic stimulants should also permit a patient to exhaust himself by uninterrupted muscular effort. It is consistent in those whose aim it is to induce exhaustion and lower the systemic vigour; but that the giving of opium to soothe and put to sleep a patient, and at the same time plying him with spirits to support and stimulate him, and all the while allowing him to rove about and exhaust himself, are equally consistent measures, is perhaps not so easily seen.

I have witnessed a great many examples of the disease both here

and elsewhere, and have seen enough to give me a very unfavourable impression of the opium and alcoholic plans of treatment. But I would not advert to cases of which I do not possess notes, and of whose history I am not fully aware. Of eleven cases treated in private, four were put upon opium and alcoholic stimulants, and the remaining seven treated by the eliminative and supporting plan which I have just recommended. Of the four cases treated by opium and alcoholic stimulants, two died; and in the other two, the paroxysms were protracted to the fifth day, and recovery was very tedious. The other seven cases, severe ones, treated by the eliminative and supporting plan, all recovered within the fourth day; the patients being thoroughly cured within from fifty-four to ninety-four hours.

I would not advance this as any proof of the great superiority of the latter plan of treatment, as delirium tremens is one of those diseases in which there is such a strong natural tendency towards recovery, that any particular plan of treatment would require to be tried in a larger number of cases than occur in any single person's experience, before a trustworthy conclusion can be arrived at as to whether it really shortens the paroxysm, or really diminishes the mortality from the disease.

My own views of the complaint, and my past experience, satisfy me that delirium tremens should be treated on the same principles as other blood disorders, and that the eliminative and supporting plan is the really rational one, and the most calculated to shorten the paroxysm, to mitigate the symptoms, and to prevent those causalties which are fraught with greater danger to the sufferer than is the original disorder itself.

In conclusion, I would remark that though I have spoken thus strongly in favour of the eliminative and supporting plan of treatment, and against the practice by opium and alcoholic stimulants, I do not mean that I consider delirium tremens to be a disorder in which it can never by any possibility be proper to give a moderate allowance of the previous stimulant. In delirium tremens, just as in any other disease, typhoid symptoms may take the place of all others, and become so pronounced, and continue so unabated after the use of ammonia or any other simple stimulant, as imperatively to demand our resorting to the use of spirits. But then this is but a usage of alcoholic stimulants which obtains in the treatment of all diseases, and does not constitute a distinct plan by itself. Nevertheless, I cannot see how they can ever be of the least service until the third or fourth day of the disease, until the system has had time in some measure to recover from a state of alcoholism. Should typhoid symptoms occur early in the disorder, I fail to see how they can be relieved by the administration of alcoholic stimulants, seeing that the system is already so fully under their influence as to have become poisoned by them and altogether unfitted for the proper discharge of its functions.

ABERDEEN, *May* 1862.

ARTICLE VI.—*Case of Fracture of the Cranium.* By J. BOYD, M.D., Slamannan.

ON the 21st of April 1859, I was sent for to see Marion M'Intyre, aged 10, who had fallen from a coal-waggon going down a steep incline on the Limerigg Branch Railway. About eleven A.M., she had climbed on the rear-waggon of the train, and it appeared that, having become frightened by the accelerated motion, she had jumped off and struck her head against a rail-chair. A playmate who was with her had also leaped off and run away, leaving her to her fate. At twelve, she was discovered lying on the ground, stiff and insensible; a heavy shower of hail had fallen before she was observed.

At four P.M., when I first saw her, she was cold, rigid, and unconscious. There was a considerable swelling over the back of the neck, and the right temple presented a marked depression, extending from the temporal ridge to the external angle of the orbit. The pupils were dilated, and the irides insensible to light; the pulse was slow and feeble; the respiration slow and intermitting. I directed hot-water bottles to be applied to the feet, thighs, and trunk, and ordered the head to be shaved. At nine P.M., I found the temperature of the body natural: the pulse was 110, weak; the respirations were irregular, 15 in the minute; the teeth were clenched; the body was still rigid: insensibility was complete.

On the 22d, reaction was fully established; the countenance was somewhat flushed; pulse 102, stronger and harder; respiration slightly stertorous; the body was stiff and motionless; the jaws were rigid. A tentative venesection was made at the arm; when two ounces of blood had been withdrawn, the stream stopped. The teeth having been separated, a purgative powder, containing three grains of calomel and six of rhubarb, was put on the tongue, and, by the aid of a little water, was slowly swallowed, and acted copiously in the course of the evening.

23d.—Having at length obtained the consent of the parents, I arranged to operate this afternoon. At four P.M., assisted by two of the workmen, who steadied the patient, I proceeded to make an incision from a point three inches above the orbit down to the superciliary ridge, and another from the starting point to near the centre of the zygomatic arch. On dissecting back the triangular flap thus formed, I found a fracture of the frontal bone, $2\frac{1}{2}$ inches in length, extending into the orbit—the posterior portion driven half an inch downwards and beneath the anterior edge of the bone, and a circular hole at the lower third of the fracture, filled with comminuted osseous particles, into which I could freely introduce the point of the finger. I picked out the fragments, and removed the subjacent clot, which was followed by several ounces of blood in a fluid state: the meninges appeared intact. Having scraped off the spicula from the margins with a strong scalpel, I next raised the depressed portion

of bone with a large curved elevator, bringing the edges into accurate contact. The flap was replaced and secured by a single stitch at the apex; cold-water dressing was applied to the wound, and the patient replaced in bed. All this time the insensibility continued. While the depressed portion was being raised, a twitch passed over the features. Two hours subsequently a feeble moan commenced, accompanied by a regular to-and-fro movement of the left arm, which was flexed and extended from thirty to forty times a minute in uninterrupted succession.

24th.—The girl's countenance appears rather more natural in expression, and is slightly flushed. The moaning continues and is louder. Pulse 90, and full; the head feels warmer, and slight shivering occurs when the dressing is wetted. The bowels have been spontaneously opened. When fluids are put into the mouth (the jaws being separated by moderate lever force), she swallows somewhat more freely. The pupils are dilated and insensible to light, the eyelids always remaining closed. The urinary secretion comes away in normal quantity as far as can be judged.

25th.—To-day, not much change is perceptible in her condition; the movement of the left arm continues with rare intermissions, and the left foot twitches about rhythmically at times. The tongue is covered with a brown crust, and somewhat swollen; pulse 96. To promote suppuration, a bread poultice was directed to be applied to the wound every two hours; and as the bowels had not been moved, another calomel and rhubarb powder was administered, which operated during the night, bringing away a quantity of dark, offensive feculent matter.

26th.—A tablespoonful of pus was observed coming from the wound on the first poultice to-day. In other respects there was little change apparent till the 30th, she being supported by beef-tea with a little bread-crumbs in it. On the day in question, on being loudly named by her father, she faintly answered "What?" The eyelids remaining closed, he raised them, brought a light close to them, and on being asked if she saw it, answered "Yes."

1st May.—To-day, on elevating the eyelids, she was able to recognise me and distinguish the colour of my dress, and said that a sixpence held about a foot from her eyes was a pan-drop (lozenge). The discharge of pus is free and of good colour and consistence; pulse 90, and soft. The movement of the left arm and foot continue at times almost convulsively. The moaning has subsided. She still requires to be fed by depressing the lower jaw.

By the end of the second week the discharge of pus had abated; the upper part of the flap being a good deal separated, I put in two points of suture, which had the effect of finally closing the wound in two or three days. During the course of the third week she recovered the power of elevating the eyelids, the irides contracted naturally, and she could move the maxilla, and began to take food in moderate quantity. By this time she was able to sit up in bed, and to notice what passed,

but spoke little,—gradually increasing in strength, till in the fifth week she was able to walk about.

From this time convalescence advanced rapidly, but the left arm remained weak and shaky. In twelve months after the accident she was able to take a situation as country servant, and continues fit to discharge her duties satisfactorily.

On the 21st October last, I saw her; she was stout, rosy, and well developed for her age, but some shakiness of the left arm was noticeable, and she was unable to grasp small objects perfectly.

The spot where she received the injury (covered to the depth of nine feet in the summer of 1861 by the *floating moss* which attracted so many thousands to Slamannan) became the scene of another accident which gave rise to much litigation. G. F., aged 53, when passing down the Limerigg Railway between three and four P.M., on the 27th February 1860, was overtaken by a train of loaded coal-waggons, the noise of which and the cries of the conductor he did not hear, being partially deaf, and a severe storm raging at the time. He was knocked down and the entire train passed over his left arm. As soon as possible he was put into a cart and conveyed to his home, a hut on the margin of the Black Loch. On reaching him I found a compound fracture of the left humerus, two inches above the condyles; the tissues were so much lacerated that I found it necessary to amputate by circular incision at the junction of the upper and middle third of the limb. The execution of the operation was attended with some odd difficulties from defective space, accommodation, improvised assistants, etc.

On the 28th, the patient appeared wonderfully well; pulse 80, and firm. In the evening a slight blush of erysipelas was perceptible on the upper part of the wound, which on the following day extended to the pectoral region. It abated under the use of tepid saturnine lotions and alterative laxatives. About an inch of the integument sloughed, but suppuration and granulation followed in a satisfactory manner; the ligatures came away on the seventeenth day, and the stump became a good one. The patient, having experienced no untoward symptom, was fully restored within a month. It was then observed that his hearing had become much more acute, and the chronic rheumatism, from which he had been incapacitated for regular employment for nearly twelve years, had entirely disappeared.

The latter circumstance seems to me to throw some light on a point in the treatment of rheumatism whether chronic or acute, particularly on the sthenic form, which we are most accustomed to meet with in country practice. In the case of G. F., apart from the general antiphlogistic regimen rendered necessary by the injury, no agency which could have influenced the rheumatism was in operation, except the diminution of the blood mass occasioned by the hæmorrhage, consequent on the accident and the amputation. Rheumatism is of frequent occurrence in this district, and in at

least nine cases out of ten I have found that free venesection as a preliminary measure, not only causes immediate abatement of the fever and pain, but materially abbreviates the duration of the disease; while the other remedial measures, whether depurants or specifics, act with markedly greater certainty and celerity after its use.

ARTICLE VII.—*Case of Ovariotomy.* By THOMAS KEITH, M.D.,
F.R.C.S.E.

MRS R., aged forty-nine, applied to me, last August, on account of a large ovarian tumour filling up the whole abdomen, to which her attention had been first directed about six months before. Previous to this her health had been good, she had married when thirty-six years of age, and had born two children. The catamenia, after some irregularity, finally ceased in December 1861. For some time the tumour gave rise to no inconvenience, and her general health did not suffer, but, by the time it had attained the size of the uterus at the full period of gestation, her health began to give way: the respiration became impeded, locomotion was a labour to her, she suffered much from abdominal pain, and shortly before I saw her, weary of life, she had taken to her bed, with little prospect of again leaving it.

From the nature of the tumour, which was evidently multilocular, from the extreme rapidity of its growth, from the numerous unmistakable signs that had already appeared of a rapid breaking up of the patient's health, it was most probable that, if let alone, the disease, with its accompanying suffering, would run its natural course and destroy life in a few weeks or months; and as nothing was to be hoped for, either from tapping or the injection of iodine—both dangerous, and but half measures at the best—I had no hesitation in recommending ovariotomy. To this, after due consideration, she willingly gave her consent, and it would have been proceeded with without delay, had not a smart attack of pleurisy with considerable effusion supervened. This yielded to the usual remedies, but a month elapsed before she was again in a favourable condition for operation. In the meantime the abdomen had much increased in size, from the presence of a large accumulation of fluid in the general cavity of the peritoneum, none of which existed at the time of my first examination of the tumour.

With the assistance of Dr Craig of Ratho, Dr Howden, Dr Sidey, and my brother, I removed the tumour on the 18th of September last. Before opening into the peritoneal cavity, thinking I had come down upon the surface of the tumour, I separated the peritoneum from its loose cellular attachments, to the extent of two fingers-breadth on either side of the incision. This mistake happened very easily, but was quickly discovered, and, on opening the peritoneum,

there was a sudden gush of a large quantity of straw-coloured fluid. One large cyst containing about eight pounds of fluid was emptied and drawn out, and some small cysts punctured; but as no further diminution of the mass could be obtained, it was necessary to extend the incision above the umbilicus, till sufficient space was gained to allow of the tumour being withdrawn. There was but one small band of adhesion. The pedicle, which consisted of the left broad ligament, was very short, broad, and thick. It was transfixed, each side was tied with a double ligature, and then divided little more than an inch from the uterus, and so close to the tumour, that a piece of thick cyst wall was left to prevent any chance of the ligature slipping. Owing to the shortness of the pedicle, it was not possible to secure the cut extremity externally. It was, however, brought as near the wound as circumstances would admit of, by passing a long acupressure needle through the strip of cyst, and then simply laying the needle across the lower angle of the wound. There was thus considerable tension upon the pedicle, though none upon the ligatures themselves, which were only loosely given a turn round the needle. The edges of the wound were secured by seven needles passed through the whole thickness of the abdominal wall, including the peritoneum. A small quantity of slightly bloody serous fluid was left in the cavity of the pelvis.

After puncturing some of the smaller cysts, and allowing them to drain for some hours, the cyst walls and solid part of the tumour weighed nine pounds and a half; but, including the fluid collected, nearly twenty-five pounds. A good deal was, however, lost, and mixed with the fluid external to the tumour, of which there was at least a gallon and a half. There were openings in two of the smaller cysts, and this fluid had probably been secreted by them.

The shock of the operation was slight. Towards evening she complained of severe pain in the lower part of the belly, which was relieved by drawing off her water. An opiate was given her, which she vomited almost immediately, and it was not repeated. She suffered for the first three or four days from thirst and occasional severe attacks of vomiting. No food was given, but she relished very much small pieces of ice and occasionally a mouthful of soda water, for more than that was instantly rejected by the stomach. The pulse rose to 105 on the third day; and then declined, and never again rose above 90. The catheter was used every four or five hours till the fourth day, when it became unnecessary, the bowels likewise then acted spontaneously and without pain. Some of the needles were removed on the fourth day, the rest the day after, when the wound was firmly united, except at the point where the ligatures came out, and required no support or dressing of any kind except a piece of lint dipped in Condyl's fluid laid over the lower angle of the wound. On the fifth day the stomach began to retain some food, which was given in small quantity and of the simplest kind, the treatment all along being strictly antiphlogistic. She

was kept very quiet, and was allowed to see no one but her husband and the nurse. The greatest care was taken to keep the air of her room as fresh and pure as was possible under the circumstances of a somewhat limited accommodation, the window being generally open both day and night.

On the seventh day slight pain was complained of in the left iliac region, where some fulness was felt, as if some pelvic cellulitis threatened. This was accompanied by considerable irritability of the bladder, and for the two following days she was restless and uneasy, and again suffered from thirst, but without fever. Thinking some matter might be accumulating, for there was very little discharge coming from the wound, I broke up the adhesions round about the ligatures to an extent sufficient to admit the finger, and soon after there was a sudden escape of eight or ten ounces of healthy pus. This gave her immediate relief. The ligatures came away with the slough of the pedicle on the fourteenth day, and the day after she was up to have her bed made. After getting into bed she had a good deal of general abdominal pain, and a troublesome irritation in the rectum came on; considerable quantities of bloody jelly-like mucus passing several times a-day. The opening where the ligatures had come out had almost closed, when, on the evening of the seventeenth day, there was a gush of thin dirty serous-looking very irritating fluid, to the amount of ten or twelve ounces. It was so fetid that it was difficult to enter the room beside her. This discharge continued all next day, but during the following night it suddenly ceased after some of the same fetid fluid had passed by the rectum. That this was the fluid left in the cavity of the pelvis at the time of the operation I have no doubt. On the twenty-second day the fistulous opening in front had quite closed, and her convalescence after that was rapid and satisfactory. When last seen, in the middle of November, she was going about as usual in the most perfect health.

Part Second.

REVIEWS.

Clinical Medicine. Observations recorded at the Bedside, with Commentaries. By W. T. GAIRDNER, M.D. Edinburgh: Edmonston and Douglas: 1862.

DR GAIRDNER requires no introduction to the readers of this Journal. For many years past, he has been one of our most valued contributors; and by his writings, published here and elsewhere, has established his character as one of the soundest patholo-

gists and most accomplished physicians of our day. His elevation, since the publication of the work before us, to a higher professional position, is the well-merited reward of years of conscientious and well-directed labour. While we regret that the Edinburgh School has lost the benefit of his services, we must congratulate the metropolis of the west on having admitted within the time-honoured walls of its university, one who has amply vindicated for himself the title of an able and successful teacher.

The present volume is, as the author informs us, different in principle from other works which bear the same title. Some books on clinical medicine consist of a series of essays on special diseases, and differ chiefly from systematic treatises in being limited to the expression of the author's opinion on certain favourite subjects. Others, again, consist of collections of cases, to which are appended, in the form of commentaries, the matured opinions of the observer. These two classes are represented by the *Clinical Medicine of Graves*, and the *Clinique Médicale of Andral*. Each of these classes of works has its peculiar value, and the works we have named have long since taken their place among the standard authorities in medicine. Dr Gairdner's book is written on a different plan; "it is an attempt to render into written words the substance of clinical teaching; the very facts observed, the very ideas suggested by the facts, and, as nearly as possible, the very doubts, difficulties, successes, and failures encountered by a teacher of some years' experience, in communicating with his pupils at the bedside on cases of more than ordinary interest." In addition, however, to the records of strictly clinical observations, we find several chapters of a more systematic character, which give the results of an extended experience; and these, we must say, are by no means the least interesting in the volume.

One great attraction in Dr Gairdner's writings is their transparent truthfulness. There is no slurring over of failures, no implied claim to wonderful diagnostic powers, no bending of facts to foregone conclusions, but an honest record of events as they actually occurred, and of the impressions made at the time upon the mind of the writer. The result is that the reader attaches perfect confidence to the statements of Dr Gairdner, and from the plan in which the work is written, he gains this great advantage, that he is enabled to follow in the footsteps of the writer, and to avoid fallacies by which he might otherwise have been misled.

The volume before us consists of twenty chapters, devoted to the consideration of a nearly equal variety of topics. We do not propose to submit it to a systematic criticism or analysis, but to direct the attention of our readers to a few of the points by which we ourselves have been chiefly impressed.

The first chapter consists of a retrospect of cases treated by Dr Gairdner in the Royal Infirmary, during the session 1855-56, and affords an opportunity for the introduction of some interesting

remarks on the treatment of acute disease. The second and third chapters contain Dr Gairdner's opinions as to the treatment of pneumonia, and his views on the celebrated bloodletting controversy. Dr Gairdner agrees with Dr Alison in thinking that an important change has taken place in the character or type of various acute diseases, and that the treatment enforced by Cullen, Gregory, and others was suitable at the time, although it could neither be justified nor borne in the present day. Into this controversy we have no desire to enter, further than to say, that we believe that a certain change has occurred in the character of disease, owing chiefly to the altered material circumstances in which our population, and especially our town population, is now placed, and possibly also in consequence of some unknown agencies; but we are also of opinion, that depletion was formerly carried too far, and that there was at that time as much harm done by routine bleeding as may be occasioned by the routine stimulation of some practitioners in the present day. The following remarks by Dr Gairdner on the treatment of pneumonia are judicious in themselves, and are a good illustration of the principles on which a rational management of disease must be founded:—

“Among single drugs, antimony has been first on my list: the greater number of the cases (not excluding some of those which appeared most debilitated), which were attended by marked fever and oppression, have had it in one shape or another; commonly in the ordinary form of tartar emetic, in doses varying from $\frac{1}{10}$ of a grain to 1 grain every hour or two. I have differed from some of my friends, and I believe from some of my colleagues, in giving the antimony *always alone, i.e.*, with nothing to mask its physiological effects; and in always simply withdrawing it, or diminishing the dose, so soon as any form of unfavourable effect, such as vomiting, purging, or depression of the system, was continuously manifested. This I believe to be better practice, on the whole, than the current method of giving the antimony with opium. Further, I have always withdrawn the antimony the instant the fever appeared to be decidedly checked, and the patient in the way of convalescence; having rarely found any relapse to follow from this practice, which has the great advantage of allowing the diet of the patient to be carefully adjusted to his capabilities of digestion in convalescence, without the chance of disturbance by a superfluous medicine. Very many mild cases, and some severe cases coming in late in the disease, have been treated by little more than common cough mixtures. Opium has sometimes been given, but chiefly as a palliative; calomel with opium (indeed mercury in any form) has been very little employed; having been given only in obstinately continuing condensations, and then only as an experiment, with great caution, and with, as I think, little positive result. In one case, indeed, the resident physician had prescribed calomel and opium in the acute stage, and I continued it, experimentally; and I am bound to state that the patient made a good recovery; but his gums were not touched. Blistering has been reserved, for the most part, for severe cases and obstinate condensations threatening to become chronic; poultices, warm fomentations, turpentine, and, more rarely, leeches, have been used as local applications in the stage of acute pain; chloroform and other stimulating liniments, blisters, and iodine, at later stages, when pain was not removed. Bloodletting has been used in two cases by me, and in two or three more before the patients' admission. All that were bled did well, but I seldom see cases early enough, and acute enough, and in sufficiently robust individuals, to justify the use of this remedy; in which, nevertheless, I have by no means

lost faith, believing it to be both very useful in fit cases, and very apt to be made a bad use of in incautious hands. Stimulants, and especially ethereal stimulants, have been freely used in cases in which the vital powers seemed in danger of failing; and that, whatever the treatment in other respects may have been. But my practice has differed entirely, if I rightly apprehend the matter, from that of the late Dr Todd of London, in respect that I have never given stimulants very largely, or as a matter of routine, or of aliment; almost never in slight cases, or in the early stages of the disease; and very rarely indeed to young persons, or to those not habituated to the use of alcoholic drinks. Food has been given simply according to the patient's powers of digestion; neither withheld, nor pressed: in the febrile period, bread and milk, or beef-tea with arrowroot, or both; during convalescence, a diet more generous and varied, but not over-stimulating. The *diète absolue*, if I may judge from what I was taught and have seen myself, is in no favour in Edinburgh either in pneumonia or in other febrile diseases. And to conclude, in all cases of doubt and difficulty, I have uniformly adopted the principle that nature is to be trusted to a great extent; believing that patients will recover much better and sooner under no active treatment at all, than under a routine treatment blindly enforced; or, in other words, that nature is a better manager than a bungling physician, who has always an inexorable system in hand to control her operations."—Pp. 53 to 55.

Four chapters are devoted to the fevers, the forms treated of being chiefly typhus and enteric (typhoid); while some remarks are added regarding the diagnosis and treatment of scarlatina. Dr Gairdner agrees with Dr Jenner, and the great majority of modern physicians, in believing that typhus and enteric fever are distinct diseases, that they are generated by different causes, are propagated by a different contagion, are characterized by different symptoms, and lead to very different anatomical changes. Any one acquainted with the medical history of Edinburgh knows that a complete change has taken place in relation to fever since the last epidemic in 1847–48. At that time the cases were pretty equally divided between synocha (relapsing fever), and typhus. There was also a certain number of cases of enteric fever; small, however, in proportion to the others. Since 1853 fever has almost disappeared; relapsing fever is at present unknown; typhus is rarely met with; while enteric fever is comparatively more frequent than formerly. Not only so, but we find from the experience of Dr Gairdner that the character of typhus is to a certain extent changed. It is now less fatal than formerly. The mortality in 1847–48 was probably about 20 per cent., or 1 in 5; while in Dr Gairdner's experience, from 1853 onwards, it has not exceeded 1 in 10. As, however, the number of cases met with of late years has been small, we should not attach great weight to the comparison, were it not that the course of the disease has certainly become modified. The eruption shows itself earlier than formerly; instead of its appearance being delayed till the fifth or sixth day, it is now fully formed on the fifth, the fourth, and sometimes even on the third. The course of the disease is less prolonged; instead of the crisis occurring on the thirteenth, or more frequently on the fourteenth day, it now takes place on the eleventh or twelfth. This diminished duration is in

all probability the cause of the smaller mortality in the present day.

The fourteenth chapter treats of pleuritic effusion. It contains several important cases of various forms of pleurisy and empyema, accompanied with valuable observations on diagnosis and treatment. In the treatment of the effusion, Dr Gairdner trusts chiefly to diuretics, the favourite prescription being cream of tartar electuary, which consists of bitartrate of potash mixed in about equal proportions with treacle or honey. We have frequently employed this medicine, and have had abundant reason to be satisfied with its efficiency. The question of the propriety of puncturing the thorax in order to draw off the effusion is considered at some length. There is no doubt as to paracentesis being the proper treatment in most cases of empyema; but in cases of acute pleurisy there is much difference of opinion as to the propriety of resorting to the operation. Trousseau, it is well known, is strongly in favour of it, and resorts to it as soon as the amount of fluid is large, but allowing himself to be guided by the amount of dyspnœa or oppression of the patient. One strong argument which he urges in favour of his practice is, that patients with extensive pleuritic effusions occasionally die suddenly from pure syncope, without having experienced the least dyspnœa. Dr Gairdner, again, would reserve the operation for cases in which the ordinary treatment has been tried and failed; he has never met with a fatal case in which, when the effusion was limited to one side, death took place by syncope, and hints in a note that the deaths in Trousseau's cases may have been connected with the severity of the diet, or the previous treatment by depletion and digitalis. We agree with Dr Gairdner in believing that it is not generally judicious to be guided by physical signs alone; at the same time, we think he undervalues the danger of death by syncope. We have seen one case terminate in this way in the person of a young, well-nourished, and previously healthy woman, who died very suddenly about the seventh day of the disease, and in whom the only lesion was a very copious effusion on the left side of the chest; and at a recent meeting of the Medical Society of the Hospitals of Paris,¹ various cases were narrated by the speakers in which a similar result had taken place. One great objection to the performance of thoracentesis has always been, that it was impossible thoroughly to empty the chest without a risk of permitting the entrance of air. This objection has been removed by Dr Bowditch of Boston, who makes use of an exhausting syringe, by means of which he evacuates the chest more completely than can be done by any other method, while the danger of the admission of air is altogether removed. Of course, the removal of the fluid does not necessarily cure the disease; but even in cases where the fluid reaccumulates, the performance of the operation generally gives great temporary relief. We believe, therefore, that thoracentesis

¹ Gazette Hebdomadaire, 14th November 1862.

will become more generally practised than it has hitherto been in this country. Dr Gairdner publishes in the appendix an interesting letter, in which Dr Bowditch gives the results of his practice, and describes the circumstances under which he resorts to operation.

Pneumothorax forms the subject of the next chapter, but space prevents us from going along with Dr Gairdner into the consideration of the various points connected with it.

The seventeenth chapter is one of the most important in the volume. It treats of the diagnosis, prognosis, and treatment of thoracic aneurism, in a manner calculated to afford much practical assistance to the practitioner or student in his study of this often obscure affection. Ten cases are recorded, and it is throughout the main object of the author to impress upon his readers the importance of the physiological method of diagnosis. Physical signs may be absent or indecisive, but a careful analysis of symptoms will often lead to a conclusion quite as well founded as the apparently more striking results of auscultation and percussion. The following are the conclusions arrived at by Dr Gairdner with regard to the localization of the disease:—

“1st, That aneurism, when accompanied by well-marked angina pectoris, is probably situate in the ascending portion of the arch, and near the cardiac plexus of nerves. The natural course of such aneurisms is to burst into the pericardium; or to compress, perhaps open into, the auricles, or the pulmonary artery, causing in many cases cyanosis and sudden death.

“2d, That internal aneurism, when attended by laryngeal symptoms, is likely to be so placed as to involve the right or the left recurrent nerve, *i.e.*, either in the innominate artery, or on the posterior and inferior aspect of the arch; in either of which situations, but especially in the latter, an aneurism may cause death by laryngeal suffocation before it is large enough to be readily detected by physical diagnosis.

“3d, That aneurism, characterized chiefly by bronchial asthma and orthopnoea, is probably situate in the commencement of the descending portion of the arch, or, at all events, so as to compress the pulmonary plexus of nerves; and that its consequences may be looked for in the obstruction of one or other bronchus, at first with the symptoms and physical signs of asthmatic bronchitis, and afterwards of pneumonia or pleurisy.

“4th, That aneurism, producing permanent and well-marked contraction, or perhaps (in rare instances) dilatation of the pupil on one side, may be expected to arise from the upper and back part of the arch or its primary branches, the sac projecting backwards in the direction of the sympathetic trunk, or of its ganglia, and of their communications with the spinal system.

“5th, That dysphagia indicates pressure either on the œsophagus, or on the pneumogastric nerve, and a corresponding situation of the tumour. To these principles I would add another, as applicable to the diagnosis of thoracic aneurisms, *viz.*—

“6th, That all aneurisms coming within the range of physical diagnosis, and not attended by any of these symptoms, must necessarily arise either from the descending aorta, below the range of the pulmonary plexus, or from the upper part of the arch, projecting upwards and forwards; as it is in these situations alone that a thoracic aneurism can attain sufficient bulk to be discoverable, without involving important internal structures, and leading to very marked functional disturbance.”—Pp. 552 to 554.

Not less important is the chapter on cardiac murmurs, which, so

far as it goes, constitutes one of the best treatises on the subject with which we are acquainted.

It only remains for us cordially to recommend this book to the careful consideration of our readers. It is no ordinary work, but embraces the fruits of an extensive experience arranged and matured by a thoroughly logical mind. To the student, it will prove of the greatest service, in assisting him in his clinical studies; while to the practitioner it will serve as a trusty companion, ready to aid him in the solution of problems which constantly present themselves in the course of his career.

A System of Surgery; Pathological, Diagnostic, Therapeutic, and Operative. By S. D. GROSS, M.D., Professor of Surgery in Philadelphia. Second Edition, illustrated. 2 Vols. Pp. 1093. 1227 Illustrations. Philadelphia: Blanchard & Lea: 1862.

FEW American surgeons are better known by their writings than the author of this voluminous text-book. His practical treatise on the diseases of the genito-urinary apparatus is held in universal estimation, and the previous edition of the work now under our consideration met with the very general approval of his brethren in Britain. Professor Gross divides his book into two parts, viz., General Surgery, in which he includes the physiology, pathology, and general principles of operations, with anæsthetics; and, part second, containing Special Surgery, or diseases and injuries of particular organs, textures, and regions.

Like most works of its class, this is principally a compilation. The industrious American appreciates the labours of his British brethren, more than the trifling differences between *meum* and *tuum*. He certainly confesses to have borrowed a few illustrations, but there are no less than eight hundred and twenty-seven reprints of the woodcuts of others. The Edinburgh wanderer in Yankee-land may drop the exile's tear upon very many familiar pictures of the past—upon the gangrenous arm from John Bell, which has pointed so many morals, and adorned so many tales; upon mortified legs from Miller; caudate cells from Bennett; fractures from Fergusson; and many mysterious hands holding scalpels in all possible positions.

Another peculiarity of American books is what their authors would term "tall writing," and *occasionally* the metaphors have been used before,—e.g. "A work on surgery, or indeed any subject, without principles, may be compared to a vessel at sea without helm or rudder to guide it to its destination." There are some "works on surgery" which might be compared to "*butter-boats*," and some are piratical, but why should everything be compared to "*a ship*?" It is time that our writers and orators should lay that poor craft up in ordinary. We lately heard of two popular speakers,

who, though previously on most friendly terms with each other, quarrelled because both wished to use this wretched metaphor at the same meeting—a shipload of drunkards encountering heavy weather being the “most beautiful portion” of both discourses. Then “*a man may struggle through several abscesses*” is not an elegant expression. What a mess he would be in at the end of the struggle! But these are trifles.

What we call here the principles of surgery, are most minutely gone into, more especially the treatment of wounds. Such a passage as the following, from p. 321, has a pleasant smack of the backwoods:—

“Along our Indian borders, severe wounds, of a punctured character, or partly of a punctured, are often inflicted with the arrow, which, as is well known, is capable of being projected with extraordinary precision to a great distance. Being usually made of the young willow, or other suitable wood, it varies in length from two feet to two feet and a half, and is feathered in the greatest part of its extent, in order to facilitate its movements and increase its speed through the air. The head is generally furnished with a spear-shaped piece of flint, obsidian, or iron. This, which is technically termed the point of the weapon [*and why shouldn't it?*], is of a flattened conical figure, its length from base to apex ranging from three quarters of an inch to an inch and a half; the corners or angles project in a line with the side of the free extremity, and are usually upwards of an inch in width. The whole arrangement being such as to enable the instrument to operate on the principle of the barb of a fish-hook. Thus constructed, the point is securely fixed in a notch on the head of the arrow by means of tendinous shreds of the deer, coated over with the resin of the fir-tree. . . . The savages inhabiting the mountainous regions watered by Pitt River, one of the northern branches of the Sacramento, it is said, use the poison of the rattlesnake, grinding the dried head into an impalpable powder, which is then applied by means of the putrid blood and flesh of the dog to the point of the weapon, the wound of which proves speedily mortal.”

How strange to find directions in a book of A.D. 1862 for the treatment of injuries by

“Arrow-heads of flint and jasper,
Smoothed and sharpened at the edges,
Hard and polished, keen and costly,”

as those which Hiawatha bought from the father of his Laughing Water in the land of the Dahcotahs.

Then comes a chapter on tooth wounds, in which we are glad to read that a *gentleman* (?), upwards of seventy years of age, received a small wound on his index finger by striking a negro lad on the mouth, and had for the short remainder of his unamiable existence a “finger stiff, crooked, withered, cold, and benumbed.” The bite of “the human subject” is alluded to, and, with somewhat needless excess of American refinement, placed in a separate paragraph from the bite of “the inferior animals;” but the treatment of the latter is the same as that of a similar injury inflicted by a *superior* Yankee.

Treating of gun-shot wounds, our author alludes to the vexed question of the apertures of entrance and exit. “The size of the two openings is variable. In general the round ball will make a

larger orifice of entrance than of exit, the reverse happening when the injury is inflicted with the conical ball." This subject is treated at length and very clearly, Dr Gross having lost no time in availing himself of the opportunities the present state of America affords for surgical study. He gives good rules for determining when to amputate; and, though he has lost all cases in which he amputated for spreading gangrene, he still advises surgeons to give the patient a chance by operating. The two cases recently reported by our townsman, Dr Handyside, in this Journal, tend to confirm that opinion. Poisoned wounds of reptiles may be treated according to the symptoms, after the usual means for getting rid of the poison; the depression may be met with whisky, "rapidly pushed to gentle *inebriation*."

Chap. XIII. discusses minor surgery, and we have "figures which afford a good idea of the more common forms of scalpel." Unfortunately, not *one* of the six figured is a scalpel in the sense in which we use that name; and in the attenuated form of the heel and blade we see but those lackadaisical modifications of the French bistoury which are seldom used here by practical surgeons, and wholly different from the succeeding cuts on the method of *using* the scalpel copied from English works. We find, as we proceed, little sufficiently original to justify our occupying space by quotations. Each subject is, however, carefully and impartially dwelt upon; and although even the most recent modifications in practice are noticed, they are not prejudged, but, after description, are left to the judgment of the future. A student, or any one whose library-room is limited, will find these two bulky volumes very compact and good dictionaries. Why should he trouble himself buying the works of English and Scotch teachers when Messrs Blanchard & Lea have set their man to work, and an American professor—not ashamed to be a publisher's hack—has dissected and made preparations from the materials of the older world, indifferent as to whether the *loot* exhibits the elegant diffuseness of Miller, or the terseness characteristic of that model text-book, Syme's Principles of Surgery? There are, however two objections to such compilations which we, as reviewers, must remark upon. One is, the vagueness and redundancy of expression. We have heard of a Yankee who having been kicked by a horse, reported himself as having "been *clawed* by beast." Another is, some little prejudices we are rather encouraged in here by a narrow-minded priesthood, against picking and stealing.

Hæmorrhoids and Prolapsus of the Rectum; their Pathology and Treatment. By H. SMITH, F.R.C.S. Third Edition. London: Churchill: 1862.

THAT a third edition of this work has been required within the few years which have elapsed since its first publication, need not be

matter of surprise ; for, beyond the ordinary circle of professional readers, many a curious and worried citizen, with the "*mens conscia recti*," may find the information he seeks and the encouragement he longs for, in this simply-written little treatise.

Without any pretension to originality, the pathology, causation, and symptoms of hæmorrhoids, both external and internal, are, on the whole, given clearly and accurately. One important point of symptomatology is not, however, referred to. In speaking of the symptoms of internal piles, Mr Smith refers to the disastrous consequences of large periodical bleedings, the occurrence of which cannot well be overlooked, but omits any mention of the cases in which, while no great bleeding may ever have been noticed, the patient nevertheless becomes blanched and nerveless, from the constant insidious hæmorrhages which occur on every occasion of his going to stool ; in each of these perhaps only a few drops of blood may be lost, and these he may possibly forget entirely in his catalogue of symptoms.

In speaking of the treatment of internal piles, Mr Smith, after condemning excision as unsafe, recommends the ligature as "indispensable in certain cases ; if properly applied an admirable remedy, and generally productive of a cure, with a danger to life undoubtedly small." Again, in page 39, he says, "I have had numerous opportunities of practising this operation, and I can truly say that in no single case have I experienced any uneasiness with regard to the result." In spite of this high praise, however, the reader soon sees that the ligature is not the only favourite of the author, but that the local application of strong nitric acid, through a speculum, with a bit of stick or a glass rod, is a mode of treatment very near his heart. The cases both of piles and prolapsus in which this mode has been used show certainly what it can do, and still more are illustrative of the curious but now well-known preference many patients have for caustics over ligature, and especially over the knife. In many of the cases, the surgeon having proposed the ligature, the patient has insisted on the escharotic. Another plan of treatment, first proposed by Mr Cusack, is used by our author in cases unsuitable for either nitric acid or ligature ; the hæmorrhoidal tumour is compressed by a clamp, and the free portion snipped away with sharp scissors, the cut surface is then wiped with a piece of sponge, and nitric acid freely applied. We are not told in what class of cases this is to be used, nor is it easy to see the special advantages it possesses. Confessedly, it occasionally fails to check the bleeding, in which case "the actual cautery may be applied," or the despised ligature may be fallen back upon.

The chapter on prolapsus contains nothing new, except that the clamp, scissors, and nitric acid are again recommended for the purpose of removing portions of mucous membrane.

In the few pages on ulcer of the rectum, though the author describes, and occasionally recommends, as simple and efficient the

operation of dividing the ulcer through its base, we regret to see that he proposes wasting his own and his patients' time with topical applications of solid nitrate of silver, ointment of the cineritious oxide of mercury, bougies made of wax or yellow soap, etc.

Though this work does not profess to aspire to scientific or historical accuracy, it does give several authorities and acknowledges several sources of information; but British surgeons cannot fail to notice with surprise that the name of the great surgeon who for the last thirty-five years has, in this department of surgery, done more than any other man, living or dead, for the establishment of an accurate pathology and a successful practice, is only once mentioned in this work, and then in order that Mr Smith may contradict Mr Syme on a question of experience!

A System of Surgery, Theoretical and Practical, in Treatises by various Authors. Edited by T. HOLMES, M.A. Cantab. In four volumes. Vols. II. and III. London: Parker, Son, and Bourn: 1861-62.

SOME time ago we directed the attention of our readers to the first volume of this elaborate work.¹ That volume embraced general pathology, and has been succeeded by those now before us, which treat of special departments of surgery. The plan of this work is so extensive, and has been so fully carried out, that we can do no more than indicate in the most general manner the nature of the subjects treated of. We are glad to say that the expectations we were originally led to form have been more than realized, and that the editor and the authors of the different treatises are entitled to the thanks of their professional brethren.

The second volume treats of "Local Injuries," and opens with an excellent practical paper on gun-shot wounds, by Professor Longmore of Fort Pitt. Mr Prescott Hewett is the author of the article on injuries of the head; and the results of his large experience are communicated in a clear and forcible manner. Injuries of the back, face, neck, chest, abdomen, pelvis, and extremities, are treated of in an exhaustive manner by Messrs Shaw, Holmes, Coote, H. Gray (now dead), Poland, Pollock, Birkett, Flower, and Holthouse. Mr Dixon, of the Royal Ophthalmic Hospital, contributes an article on the diseases and injuries of the eye, which, extending to upwards of two hundred pages, constitutes a very complete treatise on the subject.

The third volume embraces operative surgery, diseases of the organs of special sense, respiration, circulation, locomotion, and innervation. It contains one innovation, which, good as the character of the articles generally is, might with advantage have been

¹ October 1861.

carried out still farther. The authors of the articles in the first two volumes were exclusively London surgeons, and in this lies the chief weakness of the work ; for, highly as we respect the metropolis, we are by no means prepared to admit that it possesses a monopoly of surgical talent ; and a work emanating from a single school is necessarily to a certain extent one-sided. Another consequence has been, that various important topics have been intrusted to gentlemen who are no more than assistant-surgeons to the various hospitals, and who, however talented, cannot possibly write with that weight which is only to be derived from prolonged experience. The innovation to which we allude is the appearance of Professor Lister of Glasgow, as author of two excellent papers on amputation and anæsthetics. We repeat our regret that this system was not carried farther, and that distinguished surgeons out of London have not been called upon for contributions. Large as London is, and enormous as is the field it presents for observation, a work produced exclusively by its own surgeons must possess a certain local character which does not fully represent the actual condition of surgery. Still, the work as it stands is a valuable one, and contains a large amount of trustworthy and well-digested information.

INTRODUCTORY ADDRESS,

DELIVERED AT THE MEDICAL AND SURGICAL SCHOOL, SURGEONS' HALL, EDINBURGH, ON THE OPENING OF THE SESSION 1862-63, BY JAMES MATTHEWS DUNCAN, M.D., F.R.C.P., LECTURER ON MIDWIFERY.

GENTLEMEN,—I have the honour to be deputed by my colleagues around me to bid you, in their name and my own, welcome to this Medical School. We ardently wish you health and happiness during the session now begun, and prosperity and progress in your studies.

On our annual meetings like the present, it is usual for the lecturer who is nominated to the office of formally receiving the whole students for the winter to give an Introductory Address. And I ask your attention for a short time, while I attempt to explain to you your present position, to show you where you are, what you have to do, and how you can best do it. Many other topics might have been selected for this discourse. I have preferred this subject, because, if properly expounded, it cannot fail to be instructive, useful, and encouraging, to those who are on the threshold of a new era in their lives.

You have in your hands prospectuses of the medical schools and schedules of the requirements of the various examining and licensing boards ; and assuredly the student may be excused from faintheartedness should he be astonished, if not appalled, by the distance of the goal he hopes to reach, and the view of the numerous and varied difficulties he has to encounter and overcome in his course. These prospectuses and schedules you should consider well now, so that you may not have to repent of putting your hand to the plough. I advise you not to make light of the arduous nature of the task that you now undertake, like too many youths who, for want of such timely consideration, allow themselves to drift into a profession which they desert after losing much valuable time, or which they continue to cultivate with a chronic disgust or with a languor that destroys their happiness, and communicates its injurious influence to their neighbours. It is my object to aid you in reviewing your

past history, to aid you to obtain a just appreciation of your present position and acquirements, so that you may form some estimate and plan of your future pursuits.

During the joyful period of school-life you have, by means of drilling in primers and catechisms, and all the art of the pedagogue, been prepared for your student-life, with its text-books, lectures, dissecting-rooms, laboratories, and hospitals. By means of the latter, again, you will soon be discharged from your studies with a licence to practise in your hands. This object, which glitters in your students' eyes, is removed from you a space of four years. When it is gained, you find yourselves armed with an empty title, indicating to the world that you have acquired the smallest amount of knowledge considered compatible with being publicly licensed to practise medicine. Instead of being now entitled to repose in ease and dignity on your attainments, you find yourselves only on the shore of the great sea of life, ready to be cast among its billows, loosed from parents and teachers who have hitherto guided you; having, however, instead, a load of responsibility for ballast, a gallant youthful heart with its many noble passions to urge your career, and religion to guide your course. It is for this, the last era in your educational life, that you are now about to prepare yourselves, and hence the incalculable importance of your present position.

Let us look for a moment at this last era—your lives as practitioners. In it, you still continue students; but in a different sense from what studentship proper implies. Instead of having schools for your guides, you have to direct yourselves: you may seek counsel from neighbours and from books, but your course is entirely in your own hands, and you are responsible for it: no one else is. Instead of having to acquire a certain amount of instruction laid down in all its details before you, arranged and expounded for your assistance and convenience, you are studying in the boundless and, in some sense, the confused field of nature, confronting the innumerable difficulties in the varied questions regarding health and disease. Instead of having a medal, a licence, or a diploma for your object, you seek to accumulate knowledge and increase your skill with a view to earning a competence; you seek to leaven experience with science, producing wisdom in counsel as the result. But on this topic I do not enter, as it would be premature to discuss with you the life of the practitioner when you are only as yet beginning the life of the student. I have merely aimed at giving you a notion of what you are seeking by all your labours now. If you find in your hearts that some other object is the real aim of your lives, I beseech you either to cast it out for ever or to forsake these benches. If you do not adopt either of these alternatives, you can never be righteous, you can never be honest, you can never be happy. If you seek wealth, desert medicine and enter the exchange. If you seek fame, betake yourselves to the tribune, to the pen, or to the sword. It is at once natural and just that you should expect by your professional labours to acquire a competence or even an abundance of the good things of this life. Ordinary prudence in your future professional lives will secure you a large circle of admiring, grateful, and devoted friends, and confer upon you a high position and extensive influence in the community in which you live. But the labours of the medical man are not like the merchant's, directed to the acquisition of wealth; such a direction, indeed, of your efforts will almost certainly ensure their failure and your disappointment. Your practice is conducted in the strict privacy of the consulting-room, or in the bedchamber of the sick, where nothing like fame is to be found. You should never think of fame as your recompense; and your profession is one for which the public voice does not claim such a guerdon. It is reserved for soldiers and statesmen and men of letters. Their works are done to be seen of men, and they enjoy almost a monopoly of high-sounding titles and renown which they well deserve, and which only a few in our profession do unwisely covet. See to it then, Gentlemen, that your motives are honourable and pure, and do not fear that you will not have your reward. It is sure.

When you have completed your studies proper and entered upon the per-

plexing duties of practitioners, you may at first be inclined, with some of your shallower brethren, to look back, with feelings of pleasure no doubt, but without a just emotion of gratitude, to your former teachers, to think that much of your science is of little or no use in practice, to regard it only as a troublesome acquisition, forgotten mostly now, and apparently fast becoming lost for ever. And of this conclusion the occasional and unguarded confessions of forgetfulness from justly eminent and respected fathers in the profession may seem to lend sufficient confirmation. It is nevertheless a profound mistake, and one not speculative merely, but exercising a baneful influence on the energy and perseverance of many students. I entreat you not to be misled by this, and to be assured that remissness in your studies now cannot possibly be the parent of anything else than deficiency and failure in your future history,—deficiencies and failures which proper conduct as students would have enabled you to avoid, and which ought therefore to be a source of painful reflection. Schoolboy drilling and scientific acquirements, although passed and forgotten, are never lost. Studies which apparently bear no useful fruit, mental training which cannot be seen or directly tested, attainments in science or in philosophy although forgotten or only half-remembered, do yet communicate to the mind a latent power, and form hidden but important sources of the noblest qualities of the man of action—namely, common sense and wisdom. These results and rewards of culture, of scientific knowledge, and of experience, are like fragrant flowers or nutritious fruit, yielding pleasure and profit, in which lie latent and perhaps forgotten all the long cultivation of ages, with its nauseous manures, its painful pruning, and difficult training, which have been the indispensable means of its production. For your behoof, and with a view to these best and ultimate results, the wisdom of ages has been employed in devising the best education. It is laid before you in the present arrangements of the schools, and he is both ignorant and presumptuous who thinks lightly of any of its parts, or undervalues it as a whole.

Medical education and medical practice, as you regard these things, are comparatively modern developments of civilized life. They are both indeed still in vigorous growth. It would astonish you to hear how recent a thing a fully equipped medical school is; and it would be amusing and instructive to carry you back to times when, in our great seats of learning, all medicine was taught by one professor, and many important departments of practice were entirely in the hands of itinerant quacks. You have, however, to take your places in our profession as it is now constituted, and I must eschew this topic to adhere to the subject of my discourse.

Every stage in your educational life is the foundation and the parent of that which is to follow. Your general or primary education precedes your special or professional education, and the latter precedes your practical education or your lives as practitioners. With a view to producing good practitioners—our object as lecturers and your object as students—each of these stages in your education must be sedulously managed and completed. If this be not done, every succeeding educational period is thereby injured, and that irretrievably. Great exertions may, no doubt, make good the void, but such exertions are lost work, in so far as they occupy time and divert attention from the more fitting studies of the period to what should have been long ago finished work. Lost time cannot be made up: it is gone for ever. In every epoch in your lives you must stand upon what you have already done, as upon a foundation or substructure, and upon the nature and completeness of that substructure depends in a great degree the character of what is to follow.

Before entering on your medical studies you have completed your preliminary or primary education,—that part which is common to all professions, to all educated persons. As schoolboys you have learned the almost mechanical processes of reading, writing, and ciphering, and you have begun to acquire the habit of attention. You have then, in the course of your studies, and particularly in learning minutely the structure and use of the Latin and Greek languages, acquired the essence of education, the power of applying your minds

and of thereby producing mental results, the practical use of those noble but incorporeal tools which God has granted to you, constituting you lords of the creation. I am satisfied that this, the essential part of education, is, in consequence of the early age at which you enter on professional studies, still very incomplete in the majority of you. But this is scarcely a fault, for in the sciences of Anatomy and Chemistry the mind is probably as favourably exercised and instructed as in any studies. But although the mental training does not suffer, professional education undoubtedly does; and it is to be lamented that circumstances render it imperative on most young men to enter on their professional studies prematurely, obliging many entirely to omit the scientific and philosophical studies of our University curriculum for the degree of master of arts, or to make only a superficial dip into these important branches of learning.

You, Gentlemen, are supposed now to have completed your preliminary education. You have learned to speak, to read, to write, to handle numbers, and, above all, your intellectual faculties have been trained. You have probably made some steps in the pursuit of science and philosophy. Although it has little bearing on the current of my discourse, I may add, that you have made also the comparatively trivial acquirement of an immense farrago of general knowledge, and the comparatively invaluable acquirement of instruction in good morals and religion. So armed, you now propose to devote yourselves to the study of a science, or group of intertwining sciences, called Medicine, with a view to spending your lives as practitioners.

Four years of the study of a group of sciences. This is what you have arrived at. Although a great deal of what you learn is practical, some of it mechanical, you are to be students, not yet practitioners. Your object is to know and thoroughly understand, and to remember. In the dissecting-room, in the hospital, in the pharmacy, in the laboratory, in the lying-in chamber, as much as in the lecture-room, you are students learning a science, and your performance of various parts of the routine of practice is greedily encouraged by your teachers, with a view of facilitating your acquirement of science, to give to it precision, and, above all, to make it as far as possible certain that words used suggest to you not notions or vague pictures but real things. If in the course of acquiring knowledge you also acquire skill, you do so only incidentally. Skill in the art is to the student only of secondary importance; soon, however, to be his paramount desire, as he passes from the student's into the practitioner's estate, while he occupies the position of the young or half-fledged doctor.

You have in your hands, Gentlemen, schedules or programmes of such a medical education as the licensing boards enjoin, of what you must do, and how you must proceed before these boards will consent to test your attainments. You will observe that it is with difficulty crammed into a space of three or four years, that the subjects of study are numerous and widely different from one another. So great is the scope of a medical education, that it is a general and a true belief that the pursuit of no profession does so extensively and liberally cultivate the mind as that of medicine. As prescribed to you, it is, nevertheless, very imperfect, confessedly imperfect. It is not laid down as a theoretically complete scheme; it only indicates what the licensing boards think it necessary, in the present circumstances of students, of the country, and of medical emoluments, to exact from the candidates for licensed practice. You may with great advantage expend one or two additional years in the study; you ought to take additional instruction in the subjects in which you are conscious of special deficiency; and you ought, as far as possible, to avail yourselves of those courses on additional or special subjects which your teachers, recognising the vacant spaces in your imperfect curriculum, or the need of detailed instruction on important topics, do with most laudable zeal for your advancement supply in the comparatively easy summer session.

It may naturally suggest itself to you that additional or special courses constitute a new and unremunerative burden which the student may wisely avoid, that already he is sufficiently laden with masses of details, hard names, and

scattered principles, and that he should fully assimilate what he requires rather than rashly seek new material for which he has no absolute need. In these thoughts there is a little truth, but only a little, and the weight of the objections to supernumerary courses of lectures is far overpoised by the immediate value of the gained knowledge, even though it does add to the heap of details and hard names. Beside the grain of truth, the supposed overburdened student fails to discover a grand principle, which casts into insignificance all his objections, a principle important alike to teacher and to taught, and which, although even now of frequent application, must have its scope vastly extended, if medical teaching is to be improved and keep pace with medical science. The mass of separate details presented to you would soon overwhelm your memories and introduce chaos into your understandings were it not fortunately the case that knowledge grows in depth as well as in superficial extent, and that as the heterogeneous surface increases, there are produced the connecting links, the governing principles, the general laws which give the mind a comprehensive power, by which confusion is reduced to simplicity and order, and a mass of irksome details, mere chips of information, are transformed into a beautiful mosaic. As a science advances the accumulation of isolated details ever occurs, and is cause of embarrassment, until a happy induction reveals a principle, or more or less general law, which takes them, as it were, under its control, and out of a source of weakness produces a new pillar in the temple of science. To the teacher such general laws are of the greatest value, enabling him to present his subject deductively to his pupils, who, having been easily taught what was the result of a laborious or long-expected induction, can at once comprehend the position and relations of the surrounding facts on which it rests. A science indeed deserves that name just in proportion as its facts are so classified and grouped under general and yet more general principles; and a good teacher deserves that high appellation just in proportion to the degree of order and of life which he introduces into the mixed and dead details of his subject, inversely as he taxes the mere memory, giving his hearers the magic threads which guide them easily through the labyrinth, conducting them quickly to the pinnacles of the temple from which the whole plan can be easily seen and the details easily gathered up. Were I desirous to show the grandeur, the arrangements, the details, of a noble architectural pile, I would not wish to have its separate stones lying scattered over a great field; I would not wander through this field, and go laboriously over each finely-carved piece or each massive corner-stone; I would not laboriously build it up before you. I would begin by showing you its great outlines, its general plan, its parts, their arrangements, and their relations. In this way, I would, in a very brief space of time, instruct you more fully in regard to it than I could hope, at any length, to do otherwise. And, having this knowledge, you would at once remark that the omission of any important part renders the whole structure imperfect, and also that a certain amount of knowledge of the whole is necessary for the complete understanding of any of its parts.

Every new field of medical knowledge entered upon adds interest to what has gone before, throws light upon it; and, instead of only increasing the tax upon the mind, it communicates to it vigour and elasticity; instead of assuaging the appetite for further information, it surely increases it.

Many a student, ignorant of these laws of the mind, and perhaps not introduced to the study of medicine with sufficient tenderness and care, acquires unfortunately an early distaste for the science he has entered upon with enthusiasm, and, if he does not desert it for some other pursuit, gives it only a languid and forced attention. It has been a frequent experience to sit down with ardent mind, text-book of Anatomy in hand, at a table covered with human bones, to begin reading and identifying parts, to find the interest gradually dry up, the book become tiresome, the reader sleepy, and the beautiful clean and wonderful bones become a rickle of nasty, dusty ill-smelling things. And such a result can cause no astonishment, if the student sees no farther than the table before him. Encouragement sufficient lies in the knowledge that the noble

science of Anatomy is the subject of his labour; that he is now making the first and most wearisome steps in a journey which grows easier, more pleasant, and more remunerative as its progress increases. The "grinding up" of the dry bones forms an unfortunate and distasteful beginning to the study of Anatomy, and through it, to the study of medicine, although its continued pursuit amply rewards the diligent. But while many have been discouraged by the dryness of the dry bones, there has been a corresponding gratification with the early study of Chemistry, which, introducing the student to the doctrines of heat or to the elements, at once engages his attention by the interest and importance of the principles evolved even in the commencing lectures.

It is through Anatomy and Chemistry that you are introduced to the various branches of medical learning. The progress is carefully arranged for your advantage. You begin with sciences that are almost exact, in which facts preponderate, and speculations have a large and firm basis,—sciences which fortunately combine two valuable qualities which ought to ensure the diligence of beginners; *first*, their being absolutely essential to the medical student as the foundation of all progress; *second*, their being of such a kind in their own nature as to excite interest and promote the mental training of ingenuous youth. As year by year passes, the student is with sufficient rapidity advanced to more difficult studies, and especially to the Practice of Medicine, Surgery, and Midwifery,—in whose respective sciences facts and principles do undoubtedly abound, but speculations are still more rife; sciences in which opinions and speculations must not only abound but be fostered, for some solution must be obtained for practical questions. Pain, disease, and death will not halt till the sciences of them approach perfection. Their operations are incessant, and the medical practitioner must give his best aid to humanity against them. The aim of theoretical medicine is to found upon science a theory of all our doings against suffering and death. But the science of disease is unfortunately only commencing. Great physicians struggle to reconcile experience and science, and, in the present infancy of the latter, must form opinions and frame theories—must, as far as possible, supersede mere empiricism. In former times the whole teaching in different schools was founded on different theories; and as such great medical theories, whether solidism, humoralism, or homœopathy, or allopathy, have all been premature generalizations, based on a minimum of facts and a maximum of arrogant conjecture, they have tended to retard the progress of science and to enlhrall the minds of students. But now, when the wise physician discards all such proud generalizations, and becomes an humble waiter on the progress of medicine, as tested by the inductive philosophy of modern times, he does not thereby make his lessons easier for his pupils. Perhaps the contrary is the result. Both teacher and pupil, in such circumstances, have a very difficult task, and to do it well the whole powers of the mind must be employed. It is a work for the good performance of which a well-educated and well-balanced mind is necessary. It forms appropriately the end of your studies in a twofold sense.

My remarks hitherto, Gentlemen, have been confined to one point of view. I have regarded you as students of medicine. But now I shall say a few words to you as students generally. I do not wish at present to enter upon the details of the method of studying, preferring to impress upon you two or three great topics, by way of instructing you as to the proper attitude of a student of any science. I do not despise details, but principles are of greater importance. I have heard excellent lectures on these details, and have read various students' guides that are not to be lightly spoken of. But I am not very anxious that you should study such works. They tell you much about the choice of a lodging, about early rising, daily walking, short sleeping, tea drinking, cold bandaging of the head, choice of companions, use of amusements, debating societies, aids to memory, and many other important subjects. But as reading the Bible and knowing a catechism do not imply religion in the heart, so no amount of knowledge of the best methods of study will make you students. It appears to me that such instructions as I have been alluding to are only a

little more useful than would be careful lessoning of a lover how to win a maid. I daresay you will admit that if the fair one detected the formal schoolmaster in her suitor's approaches, she would turn him a very deaf ear indeed. And I may tell you, that medicine is a noble and beautiful maiden only to be won by those who bring the offering of true, loyal, loving hearts to lay at her feet. This is one of the great principles by which I wish you to supersede all petty rules of studying. The world is ruled by love. Unless you love your studies, you will never prosper in them: they will always be drudgery and weariness of the flesh. This love of your studies must be sedulously cultivated. Even when it is slight, it can be fostered to a strong passion by appropriate means. Of these the most potent are diligence and acquired proficiency; and it is easy to understand how this should be expected. Like all sciences, medicine is replete with beauties and wonders, which are known only to him who has laboriously explored its depths and unravelled its intricacies. These beauties and wonders, when observed excite joy and admiration, and increase the strength of the bonds which tie the student to his profession. And proficiency is no less powerful in keeping the heart of the student in its right place. It is at once a reward and a source of encouragement; for the student is ambitious and loves to excel, and he can be scarcely expected to run a race who cannot get a glimpse of the goal. Good teachers, knowing these things, are careful to encourage their pupils, in order to stimulate their progress.

The possession of the best natural endowments of the mind, even when associated with entire and hearty devotion to professional studies, is not, of itself, sufficient to ensure your advancement. For this, it is necessary that you should acquire the faculty of attention, and by perseverance strengthen it, and form the habit of using it. It is good advice to do with your might whatever your hand finds to do. But this might must be economized and trained. The young colt must be carefully put into harness, and gradually taught to apply its hitherto wild and aimless energy. Without the developed faculty of attention, might is only misapplied, or fitfully and ineffectively used. If, as yet, you do not possess the power of continuous attention, you must strenuously set about acquiring it; and this all can do who are not imbecile,—all will do who have a proper self-respect. Having laboriously acquired the power, you must regularly use it till it becomes a habit; and it is one of the most valuable you can form. Without it you can never turn instruction to the best account; you may maintain decent outward conduct in the class-room, but you are really a trifler as much as your neighbour who clumsily and furtively carves the desk. It is only by means of this habit that you can hope to use your talents to much advantage. And here I must not altogether omit that, at this point, the thoughtful teacher recognises a grave correlative responsibility on his part; for unless his lecture be a really good one, he has no right to expect all the eyes and ears of his pupils. He at once wastes the time and injures the mental faculty of attention of his hearers. He does them an objective and a subjective injury. The teacher should, like a good purveyor, arrange the feast and carefully prepare the viands, so that his guests may have wholesome and delicious food, which will not only nourish their frames, but also, by fine though less important qualities, excite and sustain their appetites for the repast.

How to develop this power of attention you need little instruction. In the nursery and in the school-room its cultivation is begun, and painful stimulation of the sensitive nerves of different and remote parts of the body is generally resorted to as an adjuvant in the process. You are far beyond the period of life when such means are useful. But the self-respect of coming manhood and self-interest should now be more effectual spurs than the taws, or the rod which the proverb says is for the fool's back. The resolute avoidance of wandering thoughts, the blindness of the eye to everything but the lecturer or the book, the deafness of the ear to all but the voice of the teacher, the closure of all the five gateways of knowledge against the entrance of everything except the subject matter,—these, along with a sincere desire to attend, will never fail in producing the good result. Repetition will surely form the habit.

Attention, if even moderately intense, cannot be long maintained without physical exhaustion. This fatigue, whose cumulative effects are so easily seen in the pale faces of the closing session, is much relieved by shifting the subject of contemplation. And it is in accordance with these two great principles that you should conduct your private studies. Your more public instructions are carefully arranged for you with respect to the same laws, the lecture not exceeding fifty minutes in length, and the subject of study being changed at each hour's end, or the study intermitted altogether.

Let me, therefore, as a second great advice, inculcate upon you the value of attention. By it your time is economized. By it the painful restless sitting and endless waiting of the idle student are experiences which you never learn. Time rightly used flies rapidly, joyously, and with profit.

Lastly, Gentlemen, I have a word to say to those who are not the best students. The best are endowed by nature with qualities which have been carefully cultivated, and employ their talents to the best advantage. They have a quickness and clearness of perception which often enables them to appear idle and to be careless, while others less amply endowed can scarcely, even when most diligent and attentive, maintain the same level with them. It is to those who, from whatever cause, are not quick and clear-headed as it is called, that I desire to recommend the value of thorough understanding, of clearly perceiving—in short, of knowing. It is painful to observe how much knowledge is only verbal. A vast deal of a student's knowledge must always be second-hand, be what is often called book-knowledge: indeed, to the end of your lives much of your medical knowledge can, unfortunately, never be anything else, as human life is short and human experience limited. It is not to such knowledge that I object. It is to verbal knowledge or half-knowledge, something far above the attainments of the parrot, but far less than knowing. The medical examiner is constantly meeting with students who can only answer a question when it is put in a particular way; who to consecutive questions readily give answers which are antagonistic to one another; who cannot, without utter breaking down, be cross-questioned on any subject whatever. This is the wretched half-knowing or half-ignorance that I warn you against. My advice might be put thus:—Be sure that you know what you believe you know. Find out what are the great facts in your studies, and learn them so that they may become sure landmarks for you in the field over which you have to pass and re-pass.

It is remarkable how many physicians live and die with nought else than half-knowledge. On the other hand, it is one of the best peculiarities, I do not say of great men, but of useful valuable men, that their knowledge is exact and well arranged; they have a distinct idea of what they know, and of what they hold as mere opinion or with more or less of doubt. I recommend you to keep this quality of distinctness of knowledge always before you,—never to half know a thing when you can know it wholly, simply. It is with a view to the production of this quality that the prize system is by many teachers supported. That system appears to me to have many objectionable qualities. On this topic I shall say no more, only pointing out, that trying for a prize often leads a student, for the first time, to a full and clear acquaintance with a subject. If he acquires this as to one subject, he learns the very valuable lesson—what it is, how satisfactory it is, to know thoroughly. The reflex advantage of this kind of knowledge upon the student's whole mind is beneficial, and many can testify warmly to this source of a part of their future mental character.

Unless, Gentlemen, you truly love your pursuits, you will never be happy in them; unless you cultivate the faculty of attention laboriously, you will never be successful in them; unless you are discriminating, logical, exact, you will never be thorough or secure in them.

We can all, Gentlemen, strive to secure thoroughness, success, and happiness. Doing so, we shall, in medicine at least, maintain a conscience void of offence. And, with this, I now bid you—God speed.

Part Third.

PERISCOPE.

SURGERY.

LECTURE ON SYPHILITIC AFFECTIONS OF INTERNAL ORGANS. BY DR WILKS,
PHYSICIAN TO GUY'S HOSPITAL.

YOU have probably heard much of late of the syphilitic diseases of the internal organs, but so recent has been the admission of the existence of such affections that, when only a few years ago I took specimens to the Pathological Society, the profession received the account with more than scepticism. This was no doubt due to the mistaken views of the facts and opinions which were wished to be promulgated. When, for example, a fresh organ was introduced to notice as thus affected, it was supposed that an attempt was being made to form a foundation of syphilis for a large number of visceral diseases, and every fresh instance was looked upon as an attempt to multiply this already-admitted extensive evil. This, however, was a mistaken view of our object, for no such attempt was made: the novelty being simply this, that a more rigid pathological research had discovered that other tissues than those originally supposed might be affected by syphilis, or rather, that the internal organs might be affected in a similar manner to the external. That so apparent a conclusion was not arrived at before, was due probably to the fact previously alluded to—the division of our profession into surgery and medicine, and thus, as syphilis belonged to the former department, the external relations of the disease were alone studied; and even now I am sorry to say that, although the physician claims his right to recognise the disease as affecting the internal parts, an opposition still exists on the part of the surgeon to admit that any regions of the body are affected except those immediately under *his* cognizance. Why such opinion should exist is scarcely to be understood, since all probabilities are in favour of other tissues being affected besides those immediately under the notice of the surgeon; for it must be remembered that, ever since syphilis has been known, the surgeon has recognised, as its secondary effects, diseases of the bones, of the skin, of the eye, and even changes in the interior of the body, as far as his senses would allow him to penetrate: thus, the tongue has not passed unobserved, nor the pharynx, nor larynx, nor the muscles generally, nor even one viscus which happens to be in a tangible position, the testis. What we now maintain, therefore, is that, owing to the greater attention paid to morbid anatomy, we have found the internal parts of the body affected in a similar way to the external. This admits of proof, but the present knowledge of the facts would make it appear remarkable, were it not so.

The statement regarding constitutional syphilis is this:—There is a disposition to the formation of a low organised lymph in various parts of the body, and which, in the course of time, if not absorbed, remains as a deposit of hard, fibrous tissue. I believe that it is in the stage which is styled “the secondary syphilis” that this occurs, although, of course, if the deposit be dried up into an insoluble mass, it would remain for years, and be discovered in those who had passed into what is called “tertiary syphilis,” or be found in those who had actually recovered. Surgeons have varied much in their opinion as to the symptoms and changes which should be classified under secondary, and which under tertiary; but as regards the present question, that of the deposit of which I am now speaking, I should say it was in the secondary stage, and at an early period of the syphilitic taint, and not at a remoter or in the cachectic condition, that it occurs, although, of course, the deposits may remain and be found

at any later period. I should regard a node on the bone as amongst the secondary effects ; whereas, if this node softened, and the bone became carious, this would be an ulterior result. So certain rashes and tubercles in the skin would be secondary, and pustules and sores tertiary. In thinking of this subject from a therapeutical point of view, I have long been under the impression that the value of absorbent remedies, as mercury and iodide of potassium, is in proportion to the formation of such low organisable material, and that these remedies are not curative in relation to the syphilitic poison itself: thus the failure of the iodide in secondary syphilis attended only by simple rashes on the skin, but its efficacy where pains in the bones exist, and other symptoms indicative of an inflammation of the fibrous tissues, with a tendency to the production of lymph.

I say, then, that in constitutional syphilis there is a disposition to the pouring-out of lymph of a low quality in various parts of the body, and that probably no organ of the body is exempt, its seat being probably the fibrous or areolar structures. I have said that the surgeon had recognised this disposition to the production of lymph in the chancre itself ; also, unless the disease was cured, or, according to modern theories, was of a peculiar character, that the constitution might become affected, and thus the skin be involved, the bones present nodes, lymph might almost be seen exuding on the iris—that condylomata might appear about the genital organs, nodules in the tongue and other muscles. We now also say, further experience has proved that nodules of a similar character which form in the muscles, the larynx, or as nodes on a bone, may originate in the solid organs of the body ; and it is in this deposition of low organisable lymph that we would place the peculiarity of the affection. Thus, in syphilitic ulceration of the larynx or pharynx this peculiarity is observed ; and in the case of the former there is sometimes merely a nodule, without any ulceration whatever.

I will now go through the organs *seriatim*, and in so doing I need only allude to the deposition of lymph on the iris, to the condylomata and tubercles on the skin, and to the nodes on the bones. In the last case we find a low organisable lymph poured out beneath the periosteum, which has not much disposition to soften, and is readily absorbed. I may here say that, although no one has ever doubted that such nodes result from syphilis, yet it does not follow that the deposit has such peculiarities that, when examined microscopically, it would be regarded necessarily as syphilitic ; and yet such argument is constantly used in respect to similar deposits in the internal organs. For when it is maintained that these are so constantly observed that no doubt can exist as to their cause, an objection has been made, that no peculiarities of structure can be found in them necessarily indicative of a syphilitic origin. On the same argument, I say, we might doubt such a disease as syphilitic iritis or periosteal nodes, because the lymph presents no peculiarities.

In the muscles such fibrous deposits have long been recognised, especially in the tongue. They are peculiar in not growing from a centre like other tumours, but rather infiltrations in the tissue ; thus they are not perfectly circumscribed, but are found mixed up with the muscular tissue. I have lately had under my care two cases of children who had several large nodules in the muscles of the limbs, and which were no doubt syphilitic.

In the lymphatic glands the enlargement from fibrous deposition is well known ; so that you are in the habit of daily witnessing the surgeon feel the neck for enlarged glands in cases of suspected syphilis.

Ulceration of the pharynx you know is very common, but you will observe the thickening of the edges of the ulcer, and even the dense fibrous structure at its base.

In the larynx you will observe the same fact, and also, without any ulceration, a simple fibrous deposit. In the specimen which I now show you, the glottis is entirely obstructed by a hard nodule of the same character as a node in the bone, and of a similar kind to the deposits in the liver of the patient whence it came.

As regards the internal organs, the liver is the one which was first suspected to be affected. Here we find distinct, hard, fibrous nodules in its substance. These, if been long present, are tolerably circumscribed, but cannot be entirely separated from the surrounding tissue. In some cases, where a partial absorption has taken place, the tissue is puckered up, and a cicatriform appearance is produced. Thus, in these several specimens of liver you will see all these appearances. Here are some with tolerably circumscribed nodules, others sending out processes, and some where partial absorption has taken place and cicatrices left; in some, more diffused masses, which are adherent to the diaphragm.

Some writers, as Gubler, have described a peculiar induration of the liver as found in children who have died of syphilis. From their description it would appear as if an albuminous product had been poured out, causing an enlargement and induration of the organ. Although I have seen the deposits of which I speak in the livers of children who have had hereditary syphilis, I have not yet met with this enlargement or induration of the organ. From the description given, it is scarcely distinguishable from the lardaceous or waxy change; and as this results from syphilitic cachexia, I have thought whether this may not be the condition referred to.

I have here two specimens of spleen, which came from syphilitic subjects, in whom the liver contained the deposit already spoken of, and, therefore, have no doubt that the similar deposit therein seen is of an identical character.

In the heart, as well as in other muscles, the deposit may no doubt occur. In this organ which I hold in my hand you will see a mass of fibre-tissue in the septum, and quite unconnected with the surface of the heart, as is usually the case when such fibrous tissue is the result of an ordinary inflammatory process. Here the adventitious fibre is incorporated with the muscular tissue, as when occurring in other parts of the body. I think, therefore, it highly probable that this is a specimen of syphilitic disease.

In the lungs, probably, also the same occurs, although, from the softening changes which rapidly take place in these organs, it may be constantly overlooked, and the case be regarded as one simply of phthisis. Occasionally, you may find the deposit in an early stage, as in this lung which I now have in my hand. This came from a young man who had syphilitic deposits in the liver; and the disease is seen to consist of two rounded masses in the substance of the lung, quite circumscribed and firm, and presenting an appearance quite different from the ordinary tubercular or inflammatory products. Moreover, the microscope showed it to consist of a fibre-tissue, instead of one made up of cells.

In the testes such deposits are very common. Here are several specimens, showing distinct nodules, also fibrous tissue pervading the organ in a more irregular manner; also other specimens where the organ is quite destroyed and indurated by the new product. You know it has been a question with surgeons as to the frequency or common occurrence of testitis as a part of syphilis, and I have heard very opposite opinions expressed about it; but the subject of acute inflammation is not the one of which we are now speaking. I allude to a slow and painless production of a low organisable lymph in the substance of the organ, and which, probably, would not come before the notice of the surgeon whilst the patient was under treatment for any of the more severe consequences of the disease.

As regards the nervous system, much more extended observation is required in order to discover the precise seat in which the deposit occurs. As regards the nerves, there can be no doubt that such deposit is constantly occurring in them. We had a patient who had long suffered from syphilis die with a tumour of the facial nerve, which corresponded in all particulars with the syphilitic; also another, who had long suffered from pain in the leg, who had a deposition of same kind in the sciatic nerve; she also had a similar material thrown out in lung and liver. These remarkable specimens of nerves in this bottle, where every nerve in the body is covered with fibrous nodules, the cause is, in all pro-

bility, syphilitic, as the subject was a prostitute who had laboured under the disease.

The most important cases are those where the brain itself is affected; those cases where cerebral symptoms have long existed, and especially epilepsy. In such we find a quantity of tough, yellow, fibrous tissue uniting together the surface of the brain with the adjacent membrane, and this again adherent to the bone. The cortical structure of the brain at the affected spot is often partly destroyed, and the adventitious material occupies its place. The question has still to be solved as to what structure is primarily affected. Many have given the authority of their name to the opinion that the disease commences first in the bone, but this is simply for the reason that the osseous system is that which has so long been recognised as liable to be affected; but since we now know that other structures may be similarly attacked, we are prepared to look for its commencement in other parts, and even in the brain structure itself. As regards the latter position, however, I do not know of any recorded case where a tumour or deposit of undoubted syphilitic character has been discovered, although, from cases continually before us, and which recover by appropriate remedies, a supposition of the occurrence is constantly suggested. The cases which are so frequently met with are those just named, where the deposit involves both sides of the dura mater, and includes in it the bone on one side and the brain on the other. The probabilities are in favour of its occurring in the dura mater, just as it arises in the periosteum, on the exterior of the cranium.

Probably many other parts of the body may be affected in constitutional syphilis; and I have long thought that the coats of the blood-vessels undergo a change, whereby they become thickened, and a deposition occurs on the interior, with the ordinary ulterior results.

I might also have said, when speaking of the pharynx, that the ulceration may extend to the upper part of the œsophagus, and thus, as in this specimen which I hold in my hand of stricture of this tube, the contraction I believe to be due to a cicatrization of a syphilitic ulcer.

Placenta.—That the placenta may be affected in the manner described, and be a cause of abortion, is an opinion which I heard expressed in this Hospital long before anything was known of the subject of which I am speaking. The late Mr Wilkinson King collected several cases of abortion connected with a change in the placenta, and which he believed to be due to syphilis.

As an ulterior effect in syphilitic cachexia, especially when the bones are affected, the viscera undergo the change known as the lardaceous or waxy; but of this I shall speak in my next lecture.—*Medical Times*, November 1862.

REMOVAL OF A BULBOUS NERVE FROM A PAINFUL STUMP OF THE ARM; NARROW ESCAPE FROM DEATH BY CHLOROFORM. BY MR COCK.

ABOUT eighteen months ago, a man, aged thirty-two, was admitted into Guy's Hospital, with his right forearm and elbow crushed by machinery, involving much of the soft parts of the arm itself. Mr Cock performed primary amputation at the lower third of the arm, and eventually the man left the hospital quite recovered. Shortly afterwards, the stump became painful, and continued so, with varying degrees of severity up to the present time. Indeed, latterly the pain was described as excruciating. He was therefore readmitted on the 8th October, with the object of having the stump examined and the piece of nerve removed which no doubt gave rise to the pain.

Chloroform was administered on the 14th, and, when complete insensibility had been produced, Mr Cock commenced his incisions on the stump. At this moment the patient was observed to become suddenly pale, and the breathing instantly ceased; the pulse was found also to have stopped. Immediately the most active efforts were made to restore animation. Cold water was dashed upon the face and chest without avail; Mr Cooper Forster used artificial respiration by compressing the chest laterally; the lower jaw was forced downwards, and the mouth kept widely open; whilst the tongue was seized by Mr Bryant, and held out of the mouth by means of a flat forceps. In the course of two or

three minutes the artificial respiration succeeded in producing a sigh, and as the pulse commenced to beat, it was sufficient encouragement to continue it. In three or four minutes more it was quite successful, and the breathing and circulation were established, the colour returning to the cheeks. There can be no doubt that if the most energetic means had not been at once restored to, the result would have been fatal. The great functions of respiration and circulation appeared to cease simultaneously. It is more than probable that the pulse was the first to give way, and that syncope preceded the asphyxia.

This makes the sixth or seventh case we have now seen of nearly fatal issue within a definite period of time, and the result of continued experience seems to prove that the best chance is held out for the safety of the patient by opening the mouth wide, pulling the tongue forward to free the glottis, and then actively employing artificial respiration, as was practised here. If matters still remain doubtful, the forefinger should be introduced far back into the throat, to ensure that the glottis is not closed by its valve.

Mr Cook now proceeded with the operation, and removed a portion of the median nerve, which had terminated in a bulbous extremity nearly half an inch in diameter, most probably the cause of the pain. The patient was partly conscious, but no more chloroform was administered. We are happy to state that he is doing well.—*Lancet*, November 1862.

CALCULI IN A CHILD. BY DR JOHNSON.

AT a recent meeting of the Medical Society of the County of Kings (U. S.) Dr Johnson narrated the following case:—

Thos. D., 2½ years of age, came under my observation about one year ago, suffering from retention of urine. The child is a strong, fleshy child, and mother states that she has been in the habit of feeding the child with meat three times a-day. They have always lived in Amity Street since the birth of the child. Percussion over the bladder showed that it was distended, rising far above the pubis; introducing a silver probe, which had been curved to the shape of the urethra, a large calculus was found distending the urethra, at the junction of the spongy and membranous portion of the urethra; small, narrow-bladed forceps were introduced, and an attempt was made to extract the calculus by the use of the forceps. This was unsuccessful, both in my hands and those of the staff present. An attempt was made to press the calculus forward with the finger in the rectum. This could not be done. The child was placed under the influence of chloroform, and another attempt to remove was made.

Failing in our endeavours at extraction, after the most thorough trial and dilatation of the anterior portion of the urethra, we attempted, by means of a large silver catheter, to force the calculus back into the bladder; but this could not be done. The calculus was then cut down upon, and its removal effected through the opening. The wound healed readily. The calculus was of an irregular, oval shape, rough on the sides and smooth at the ends, and so large that it would not pass through the guage of a No. 11 Tiemann's bougie. It was somewhat strange that so large a calculus could have worked its way into the child's urethra. As it was, it completely obstructed the passage of the urine, not allowing the ordinary stillieidium, which occurs when there is an obstruction of the urethra.

About two months after this, the mother found the child complaining again of pain in the penis, and gave him some flax-seed tea; shortly after, in an attempt to pass water, a calculus of considerable size was forced into the urinal. Some six months after this, the mother again brought me the child with retention of urine, though not complete at this time. On examination, a calculus was found lodged nearly in the same position as the first one. After dilating the urethra as far as possible by bougies, a small pair of narrow-bladed forceps was introduced, and the calculus removed.

Whether the unnaturally stimulating diet of meat had anything to do with the successive formation of the calculi, I do not pretend to determine; but it is an interesting query as to the cause of so many calculi being formed in so short a time in so young a child.—*American Medical Monthly*, August 1862.

OF VARIOUS PROCEDURES APPLICABLE TO THE TREATMENT OF RANULA.

MUCH has been said of ranula, and the result of universal experience is, that a procedure which succeeds in one instance, entirely fails in another. Hence the necessity of describing, from time to time, the new methods proposed for the cure of a disease which too often baffles the ingenuity of the surgeon. Amongst the recent cases published in the medical journals, or observed by ourselves in the hospitals of Paris, several speak highly in favour of the seton and of drainage. The *France Médicale* relates an instance in which the disease had lasted three months, and in which M. Foucher, surgeon of the hospitals, inserted transversely into the tumour a seton consisting of three threads: two teaspoonfuls of the characteristic fluid escaped, and the consequences of the operation were most satisfactory. Adhesive inflammation induced the gradual atrophy of the cyst, the threads were withdrawn on the eighth day, and after an interval of forty-eight hours the patient, a woman of thirty, was discharged entirely cured, and suffering no inconvenience in speaking or in mastication.

M. Chassaignac is in possession of the particulars of a dozen cases of ranula, in which he resorted to drainage with the most perfect success. His method consists in passing with an incurvated trochar, a fenestrated india-rubber tube through the tumour. The extremities of this tube are then tied to each other so as to form a small ring, which fits behind the teeth, and may be left for several months, without much inconvenience, *in situ*.

In these cases the ranula consisted in a dropsical condition of the serous bursa which lies beneath the mucous flooring of the mouth, and bears the name of Fleischmann's bursa. Another variety of the same disease appears to consist in the accumulation of mucus in some of the follicles situated under the tongue. In this form of ranula the parietes of the tumour are thin and translucent, its contents all gelatinous, and a relapse infallibly occurs after a short interval if mere incision has been resorted to. For *follicular ranula*, M. Chassaignac has recourse to excision combined with the application of lunar caustic. He removes with scissors the entire wall of the tumour down to the points in which it is continuous with the mucous membrane. In a case of this description, M. Foucher applied with success M. Jobert's hem-suture. He detached the mucous membrane, exposed the cyst, a part of which he removed, and turning down the remaining portion, so as to place it in apposition with a bleeding surface, secured it in this situation with a suture.

While alluding to drainage, we should not omit to say that M. Pauli, a surgeon practising at Landau, instead of Dupuytren's double button, employs a hollow, jointed ring, each half of which is supplied with two apertures. This appliance induces the suppuration and subsequent contraction of the cyst, without inconvenience to the patient.

The *Presse Médicale Belge* also inserted this year in its columns a communication, in which M. Deroubaix's hospital practice is described. We extract the following passage:—"M. Deroubaix, in the first place, lays open the cyst by a liberal incision close to the posterior surface of the maxilla. He grasps the posterior lip of the incision with the forceps, and removes with curved scissors a portion about ten lines in width by fifteen in length. The cavity is then cleansed of its ropy and adhesive contents, and the loss of substance presents the aspect of an oval-shaped aperture, limited near the jaw and near the tongue by a margin sufficiently broad to admit of the insertion of sutures. A silver ring (strong enough to resist the pressure of the tongue, but so flexible as to be easily moulded to the form of the artificial orifice, and to adapt itself within the mouth) is placed in the wound, and secured to its margin by eight sutures. At the conclusion of the treatment, in order to avert the possibility of the ring being swallowed during sleep, it is attached with a wire to one of the teeth. This procedure absolutely prevents the edges of the wound from closing before its fundus has granulated and healed. Premature cicatrization is thus hindered, and may be delayed as long as the surgeon deems necessary."

The author conceives that this procedure is open to none of the objections which have been raised against the methods in use hitherto; and in the case he relates a complete and permanent cure was effected.—*Jour. de Med.*

OVIARTOTOMY IN FRANCE.

THE hopes entertained with regard to the results of ovariectomy are daily becoming realized. Dr Koeberlé of Strasbourg has transmitted to the Academy of Medicine the account of the second successful case which he has had, having extirpated the cyst on the 29th of September last. M. Boinet has communicated to the same body the detailed account of a similar operation with equally favourable results, the patient having been a woman thirty years of age.

In the latter case, the extirpation was indicated by the rapidity of development of the cyst, and by the failure of fiveappings in the course of five months—the tapping on each occasion having been followed by the injection of tincture of iodine. The employment of this treatment is sufficient proof that M. Boinet had diagnosed the presence of an unilocular cyst. He also made out that the tumour was free from adhesions, a circumstance which still farther encouraged him to practise ovariectomy. The operation was performed on the 15th of September, and presented no special peculiarity. After having excised and removed the whole cyst, the pedicle was brought out at the lower angle of the wound, which was then closed by means of twisted sutures passed round three stout pins, which comprehended the peritoneum, the fasciæ, the cellular tissue, and the integuments; the pin situated at the lower angle of the wound passed, in addition, through the pedicle of the tumour; finally, the borders of the wound were still farther approximated by means of two points of metallic suture.

The subsequent treatment of this case was conducted according to the recommendation of Mr Baker Brown. A grain of extract of opium was administered at first every two, and then every three hours. The patient was kept warm, and her strength was supported by wine and soup. On the 18th, 19th, and 20th, the three pins, and finally the metallic thread, were removed. From that time cicatrization proceeded uninterruptedly, and on the 21st of October the patient was to be seen, in perfect health, seated in the library of the Academy, while M. Boinet was reading his paper.—*Journal de Médecine et de Chirurgie pratique*, November 1862.

Part Fourth.

MEDICAL NEWS.

PROCEEDINGS OF THE EDINBURGH OBSTETRICAL SOCIETY.

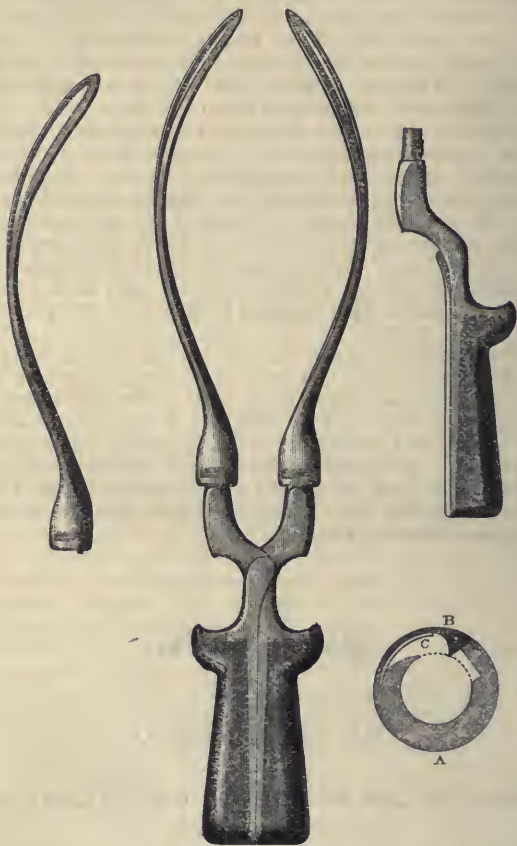
SESSION XXI.—MEETING X.

May 14, 1862.—Dr PATTISON, *President*, in the Chair.

I. MODIFICATION OF MIDWIFERY FORCEPS.

Dr Cappie showed a pair of forceps which he had recently contrived, and made the following observations with regard to them :—The instrument I now show to the Society may be most readily described as a long forceps divided at the middle of the shank, with a socket attached to the blade portion, and a nipple fitting accurately into the socket on the handle portion, the two being made to unite by a bayonet joint. In joining them a small secure nob on the nipple is received into a notch in the solid part of the socket. When the nipple is fairly inserted the knob is opposite a slit in the socket, which extends round one-fourth of its circumference, and giving the handle a quarter turn, it slides along the slit until it rests on the solid part of the socket. When this is done the instrument resembles a blade of the long forceps thickened at the

shank. To prevent the handle turning back a catch falls in behind the knob. The catch, B in the wood-cut, is a small piece of steel which rotates on a pivot. It is thick at one end and thinly bevelled at the other. The thin end is kept up by a spring (C), which is simply a flat bit of brass inserted into the edge of the socket. The brass has sufficient elasticity to keep up the end of the catch, and it is not so liable to rust or break as steel would be. When the nipple is



first inserted the knob is under the thin end of the catch, and as the handle rotates the thick end is necessarily raised, and the spring depressed. Then, so soon as the knob has passed the edge of the catch, the latter is made to fall in behind it by the spring raising its further end. The working of the joint is very simple and easy. The nipple is first fairly inserted, and then a quarter turn being given to the handle, it is held at once and securely. No traction on the handle will separate it from the blade unless the knob breaks, which is very unlikely. To disjoin the parts it is simply necessary to depress the thin end of the catch and rotate the handle backwards. The joint will not be liable to require any repair. If any dirt impede the working of the catch, its pivot, being a small screw nail, is readily taken out, and every part may be cleaned and replaced in a few seconds. I may remark, however, that if from any cause the catch may not be working properly, the efficiency of the instrument is not

greatly interfered with. I have as frequently used an instrument having the simple bayonet joint as one with the addition of the catch. With the former more care is simply required to get the handles to lock. In using the instrument no strain whatever is thrown on the catch. In making compression or traction all the force is thrown on the solid part of the socket. I may also observe that each handle is made to fit either blade. The form and proportions of the blades are those of the Simpson's long forceps; but I have slightly modified the shape of the handles.

Such being the construction of the instrument, what are its advantages? One of these I need not insist on: its portability will at once be admitted. It has been recommended that practitioners should accustom themselves to the use of one pair of forceps on all occasions; but the cumbrous bulk of the ordinary long forceps is a drawback to the suggestion being extensively acted on. The instrument, however, which I now show, not only has the leverage power and other advantages of the long forceps, but is more portable than the ordinary short forceps. Chamois leather slips are provided for the separate pieces, and the blades may be conveniently carried in one coat pocket, and the handles in the other. But it was not to provide a merely portable instrument that I studied to contrive this modification of the forceps. The instrument I had been accustomed to use was the Simpson's long forceps, and I had been in the habit of applying it without disturbing the ordinary obstetric position of the patient. The upper blade may usually be readily introduced along the sacrum, and then cautiously edged upwards over the head of the child; but sometimes I have had difficulty in doing this, on account of the length of the instrument not permitting the handle to be sufficiently depressed. It was therefore necessary to bring the body of the patient to the very edge of the bed. This occasions a good deal of bustle, and at the best is an awkward position. It might be put up with if one had always sufficiently cool assistants; but in ordinary practice this often is not the case, and the more independent of nurses and assistants the practitioner can make himself the better. The principal advantage then, I am inclined to claim for this instrument is, that it may be readily applied whatever be the position of the patient. Very often she is restless, and even under chloroform it is not always easy to control her position. But whether she be on her back or side I have never had any serious difficulty in introducing the upper blade. Indeed, the whole process of applying the forceps may be gone about as quietly and with as little appearance of bustle or disturbance as any other part of the management of labour. Certainly it is quite unnecessary to make it appear that anything like a formidable undertaking is engaged in. The assistance of nurses may be entirely dispensed with, and even the bed-clothes need hardly be disturbed. I have been in the habit of introducing both blades before joining the handles, and I have not had more difficulty in getting the first to keep its position than with the ordinary forceps. Either the upper or under blade may be applied first, and the second may be introduced either before or behind the shank of the other, as, in consequence of their shortness, the one can readily be lifted over the other. When the blades are in position a handle is first inserted into the socket of the lower blade and rotated upwards, and then the other handle inserted into the upper socket is rotated downwards. If the blades have been correctly adjusted the handles will lock at once.

In illustration of the advantages of this instrument I may mention two cases which occurred very recently. On the morning of the 5th April last I was sent for to assist a friend in a case of puerperal convulsions. Mrs C. had fallen on the floor in a fit at eight o'clock the previous evening, and since then severe convulsions had continued to come every half-hour. When I saw her at two A.M. the point of the finger could hardly be introduced into the os uteri, and there appeared to be no pains. I punctured the membranes with a common pencil, and tried to dilate the os with the finger; but with little success, in consequence of the absence of expulsive effort on the part of the uterus. Notwithstanding the free administration of chloroform the fits continued to recur regularly every half-hour, and the coma between them was so deep that she could

not be made to swallow anything. A glance at the dirty pale, almost anæmic, countenance of the patient, was sufficient to convince us that bleeding to any extent was not to be thought of. I left her, with instructions I should be sent for if pains appeared to commence. I was sent for at six A.M., and found the os slightly dilated, and the pains very trifling. I again tried to dilate with the finger, and succeeded till it was about the size of a crown piece. The case now appeared very urgent, and it was obvious that unless the patient was speedily delivered she would soon sink from exhaustion. The vagina was not relaxed, and the distinction between the internal and external lips of the os was not obliterated. In such circumstances, although the first blade of the ordinary long forceps might have been applied perhaps more readily than my own, the handle would have been so much in the way in the unrelaxed vagina as to have rendered the introduction of the finger to guide the second blade within the lips of the os almost impossible. With the present instrument, however, I managed to accomplish it with a little manœuvring, fixed the handles, got them to lock readily, and then by making cautious and intermitting traction on the head, at the same time supporting and pushing back the lips of the os, I got the latter gradually dilated. After the head had passed into the vagina the child (dead) was born in a few minutes. This was at eight A.M., and the patient had only two fits from that time till four P.M., after which they did not return. In the forenoon she had a turpentine injection, which roused her sufficiently to enable her to swallow a little brandy and water, but the comatose condition continued the whole of next day. Small quantities of stimulants and beef-tea continued to be administered to her, and after consciousness returned her progress towards recovery was steady. I may mention that this patient had convulsions in her first confinement at the last stage of labour; that she was at that time largely bled without the frequency of the fits being affected; and that, although they had continued a much longer period at her present confinement, her recovery was as satisfactory as in her first. No bad effect resulted from the rough treatment to the os uteri.

The other case I have to mention was one of twins, where dropsy of the lower extremities existed to a most unusual extent. The swelling in both legs was very tense to the upper part of the thigh. Soon after labour commenced she became quite helpless, she could not alter her position in bed, nor bend her knees to more than a very slight extent. Uterine action was very brisk, but the outlet of the pelvis was considerably contracted. In this case it would have been almost impossible to have brought the body over the edge of the bed. It was necessary to apply instruments just as she lay. The short forceps might have been introduced, but from the great force that had to be exerted before the head was born, the want of leverage power would have been felt. The twin first born survived, and the patient made a good recovery.

Dr Pattison remarked that Professor Hamilton had at one time employed forceps fitted up with a joint between the handle and the lock, and intended to fulfil some of the indications which had led Dr Cappie to the contrivance of the instrument before the Society; but that instrument had soon fallen into disuse. He (Dr P.) wished to know if Dr Cappie did not find it difficult to keep the first blade of his forceps in position while the second was being introduced; for it appeared to him that when there was no handle attached to it by which to keep it *in situ*, there would be great risk of its rolling round and getting out of place.

Dr Cochrane was afraid, moreover, that after the instrument had become fixed, it might give way at the joint whenever any degree of tractile force was applied to it.

Dr Cappie stated that there was no chance of anything going wrong after the forceps were locked, as the strain was not applied to the slight spring but to a solid shelf of steel; but he admitted the drawback resulting from the difficulty of keeping the first blade from rolling about out of its position. He was well aware that it was not the first time an attempt had been made to reduce the forceps into a more manageable form; but he believed the modification

which he had brought before the Society would be found to be more simple and suitable than any that had been before proposed; much more so, for example, than Conquest's instrument, which, besides its other defects, could only be used as a short forceps.

Dr Keiller regarded *Dr Cappie's* instrument as an extremely ingenious attempt at improvement of the midwifery forceps. By separating the handles from the blades their portability was doubtless much increased; but this could only be done at the expense of their more solid and more important advantages. The tendency of the detached blades to roll about in the vagina was a decided drawback, for there seemed to be nothing to prevent them from passing right up within the uterine cavity in long-forceps cases, and thereby to complicate the adjustment of the handles; so that one who was not very often in the way of using such forceps would be apt to get confused. What we ought to aim at in all our instrumental modifications was simplicity, together with efficiency. He (*Dr K.*), like many others, had repeatedly attempted to render more portable, and otherwise diminish the somewhat bulky instrument in ordinary use, but found that *Dr Simpson's* forceps in construction and efficiency could not be easily improved. He (*Dr K.*) had never experienced great difficulty in shifting the position of the patient so as to place her most favourably for the easy introduction of the ordinary instrument.

Dr Alex. R. Simpson observed, that the difficulty insisted on by *Dr Cappie* in the introduction of the ordinary long forceps would be entirely avoided, if—after having introduced the first blade lowermost or to the left side of the pelvis—the operator were to introduce the second upper blade with its point directed along the hollow of the sacrum, not attempting to keep the second blade in a position of direct antagonism to the first, but applying it almost at right angles to it; and only bringing it into complete apposition after the point of it had been passed along the hollow of the sacrum, and made to sweep upwards and forwards till it came to lie in the right side of the pelvis. The difficulty under consideration, moreover, could always be overcome in any case by placing the patient on her back, in which position all forceps operations were conducted on the Continent. He (*Dr A. R. S.*) disliked the liability of instruments furnished with delicate springs to get out of repair, and thought that we should miss, in the new instrument, all the purchase and power of guiding the course of the blades which were insured to us by the old solid-stemmed forceps.

Dr Wilson thought that the breaking down of the instrument proposed by *Dr Cappie* would complicate the process of application, and render it more difficult for beginners to learn the mode of employing the forceps.

Dr Cappie thought, on the other hand, that one who was learning for the first time to use the forceps would find it easier to apply the jointed instrument than the ordinary one.

II. CASE OF SUSPECTED REPETITION OF INFANTICIDE.

Dr Mackinlay of Paisley contributed the following notes:—In narrating the following case or cases, I do so not on account of any very great peculiarity, but solely from the remarkable circumstance that a person was brought up for the crime of child-murder twice within the space of six years, besides being suspected of having, within the interval, had an abortion. The first time, as will be seen from the report, was in January 1856, and the circumstances were these: A small, wooden, unblackened coffin was found by the gravedigger in one of the churchyards of the town. Upon inquiry it was found that this coffin had been placed there by a person of the name of Muldoon (brother of accused); and upon this clue being followed out, his sister was said to have given birth to a child a short time previously. Immediately after our inspection of the body of the child we proceeded to the place where she was residing, a distance of about three miles from town, where we found her in bed, and upon examination it was evident that she had recently given birth to a child. Indeed she admitted the fact, and stated that it had been overlaid in the bed; her mother, who was and had been in the house with her, knew nothing about the matter, at least

she stated so, although there was every reason to believe that both had a hand in making away with the child. It appeared to be of a robust make. In the stomach there was, as mentioned in the report, a small quantity of curdy matter: this, upon the application of chemical tests, was found to consist of milk.

"*Paisley, 21st January 1856.*—At half-past eight o'clock this evening, in the office of the Renfrewshire County Buildings, Paisley, a coarsely made, small, wood, uncoloured coffin was produced to the subscribers, by Daniel Robertson, gravedigger, in presence of Alexander Cushney Christie, D. Austine, officer of said county police, and John Crawford, corporal of Paisley burgh police. The coffin was opened in their presence, and found to contain the body of a recently born male infant, partially attired. The body was removed from the coffin and stripped; the coffin and the clothes separately labelled. We proceeded to the examination of the body. The length of the body from vertex to soles of feet was twenty-one inches; from soles of feet to centre of navel, nine and a half inches; and from centre of navel to vertex, eleven and a half inches. Its weight was seven pounds and three quarters of an ounce. The body had evidently been carefully washed after birth. The navel string was three inches and a quarter in length; had been divided by a cutting instrument; tied near the extremity by some plies of cotton thread; and wrapped around by a white rag, which was stained with blood of a light red colour; the thread and rag were removed, and separately labelled. The eyelids were shut, but not agglutinated; both ears were livid, the right more so than the left; the cheeks were densely livid, slightly swollen, and from beyond the middle of each to near the mouth quite hard and firm; the lips were dark, livid, and slightly swollen; the mouth shut, the tongue swollen, and the point of it protruding beyond the gums, but not through the lips; the inside of the nostrils were slightly besmeared with blood; and on the outside of the upper lip, towards the left side, there were faint streaks of blood also, and this part bore the appearance of having been washed or carefully wiped. There were no external marks of violence on any other part of the body, and no indications of progressing decomposition. The hands were open, and the thumbs and fingers were slightly bent inwards.

"The outside of the chest was well arched. Both lungs were found expanded, and filling their respective cavities; they were of a light pink colour, and the vessels on their surface distended with blood; they felt soft and spongy. The whole viscera of the chest and thymus gland were removed, they weighed three and a half ounces and twenty-seven grains. Placed in water they floated freely, the larger portion of the lungs rising above the surface of the water. The lungs, separated from the heart and thymus gland, weighed two ounces and one hundred and ninety-one grains, floated on the surface of water and crepitated freely in every part. When separated, pressed under water, air escaped copiously from each. The right ventricle of the heart contained some dark, fluid blood; the left ventricle had in it some fluid blood also, which was of a lighter colour; the auricles were empty, the blood having escaped from them in the removal of the viscera; the foramen ovale was closed; the diaphragm was depressed to the extent it usually is after respiration had been freely performed; the trachea was laid open throughout its extent from below upwards, it contained some frothy mucus slightly tinged with blood, the quantity being more copious towards its upper part; the tongue was swollen, its blood-vessels congested more conspicuously in the middle where it was darkly livid. None of the viscera of the chest or abdomen exhibited appearance of disease. The stomach contained some glairy, nearly pellucid fluid, with about three fluid drachms of a thick, whitish, curdy substance. The smaller intestines were nearly empty. In the colon, particularly towards its lower part, and in the rectum was a large quantity of meconium. The bladder contained a very little limpid urine. On reflecting back the scalp on the pericranium over the upper part of the frontal bone, an inch from the sagittal suture, there was a thin clot of blood five-eighths of an inch in diameter. The vessels of scalp were turgid. All the vessels of the membranes, as well as those of the brain, were extremely

distended with dark blood; but there was no effusion either on the surface or into any part of the brain. The substance was firm.

"We are of opinion that foresaid infant had at birth attained the full period of utero-gestation, and was well formed and vigorous in every part; that it was born alive, and had not only respired fully and freely, but performed the act of deglutition, and was alive probably some hours; that its death had taken place not more than three days ago, and was caused by asphyxia, produced by forcibly preventing the admission of air to the lungs through the mouth and nostrils. This we certify on soul and conscience.

"D. MACKINLAY, M.D.

"W. B. M'KINLAY, M.D."

The second case is one rather more unusual, the death in this instance having been caused by the loosening of the ligature applied round the umbilical cord after it had been properly tied. After the accused had been safely delivered, and the cord secured by the person who was in attendance, there was seen to be a considerable escape of blood upon the clothes from about the umbilicus; the clothes were taken off, and the cord was again tied, and no blood at that time escaped; in the course of the evening, she having been delivered in the morning, the child was said by the prisoner to be in a fit, but upon examination the child was dead, and the clothes were found to be very much saturated with blood, and they had evidently been loosened from the last time of securing the cord. The evidence to inculpate the prisoner was considered defective, and she was not brought to trial.

"*Paisley, 15th November 1861.*—This evening, within the Black Bull Inn, Lochwinnoch, David Dunsmore, gravedigger, delivered over to the undersigned a coffin;—this, upon being opened, was found to contain the body of a male infant, which was identified by John Dunsmore, wright, Mary Mackinnon or Wylie, residing in Main Street, Lochwinnoch, and Margaret Greenlees or Lusk, also residing there, as the child of Mary Muldoon, residing in Main Street, Lochwinnoch, which had been interred this day.

"The appearance of the body was that of a perfectly developed infant, born at the full period of utero-gestation. The skin over the whole surface was very pale, and appeared to be blanched, with the exception of the outer aspect of the thighs, where there were several small blotches or spots of a reddish hue, there was no mark of violence on any part of the surface of the body.

"The extreme length of the body was nineteen and a half inches; from vertex to umbilicus it measured ten and a half inches, and from umbilicus to sole of foot, nine inches. The umbilical cord, which appeared partially shrunk, measured two inches, and the ligature which was around it was very loose, consisted of two plies of white worsted stocking yarn. The chest was fully arched; and upon being laid open, the lungs were found to fill their respective cavities, overlapping the pericardium. The whole of the contents, viz., thymus gland, right and left lungs, pericardium, and heart, were removed; and when placed in water were found to float freely upon the top. The lungs were of a bright colour, and freely crepitant throughout the whole of their substance. The heart contained a small quantity of dark blood; the foramen ovale was closed. The whole of the blood that could be got measured only seven fluid drachms, and was of a dark colour and fluid, and the blood-vessels were almost empty. The abdomen was laid open, and the stomach was carefully secured by double ligatures, and upon being removed was found to contain about half a drachm of a darkish glairy substance, having no peculiar odour. The stomach and its contents were transferred to a clean glass bottle, and having been sealed and labelled, were preserved. The liver was of a normal size and appearance; the other viscera were normal. The bladder contained a small quantity of urine; there was also some meconium in the lower part of the intestines. Upon separating the bones of the head, the vessels of the brain were found slightly congested.

"From the small quantity of blood present in the heart and blood-vessels, the blanched appearance of the body generally, and from the absence of the

slightest appearance of disease or violence, we are of opinion that the death of the before-designed infant was due to the loss of blood from the umbilical cord. This we certify on soul and conscience.

“W. B. M'KINLAY, M.D., F.R.C.S.E.
“D. RICHMOND, M.D.”

Dr M'Kinlay explained further that the ligature on the cord was found by the midwife to have been interfered with.

Dr M'Gowan thought that when worsted had been used to tie the cord, it was not astonishing that hæmorrhage should have taken place; and the occurrence of fatal hæmorrhage under the circumstances recorded was not enough to warrant the conclusion that the child had been the subject of foul play.

Dr Keiller said that in cases of suspected infanticide it was extremely difficult to produce evidence sufficiently clear and strong to convict the accused. The very unsatisfactory and most absurd state of the law in regard to *proof of live and complete birth* has often rendered even the clearest evidence of infanticidal guilt altogether futile. In the cases under consideration, if there was no further proof of culpability adduced than that given in the reports, it would be no difficult matter for counsel to disprove *wilful asphyxia* or *culpable* loosening of the umbilical ligature, however suspicious looking the facts were. He (*Dr K.*) had repeatedly witnessed appropriate enough cases for counter evidence, and very lately had a case where he thought he had tied the umbilical cord all right, but hæmorrhage occurred from the cut end of it, and the child nearly bled to death before it was noticed and again secured. He (*Dr K.*) had mentioned cases to the Society where there could be no medical nor moral doubt as to the guilt of the accused, and yet such evidence was not considered *legally* sufficient.

Dr Alex. R. Simpson remarked, that wherever the cord was unusually thick there was this danger that, after its division, the “gelatine of Wharton” might escape freely from the cut surface, and thus cause the cord to shrink to such a degree as to permit the out-flow of blood through vessels that at first seemed to be securely constricted.

Dr Wilson stated that he had seen a number of cases where great hæmorrhage had occurred from shrinking of the cord or relaxation of the ligatures, but in none had the loss of blood ever proved fatal.

Dr Pridie mentioned a case that had occurred in his practice, where hæmorrhage occurred from the root of the cord to such an alarming degree, an hour or two after birth, that the life of the child was almost despaired of.

Drs Cappie and *Bruce* stated that they had each seen cases where the blood-vessels of the cord had been cut into when thread had been used for securing it. *Dr B.* had seen it only when improperly applied.

III. ENCEPHALOMA UTERI IN A CHILD.

Dr Alex. R. Simpson showed a preparation of the uterus and appendages, which he had removed at the post-mortem dissection of a child eleven years of age. He first saw the girl in consequence of the presence of a large tumour about the size of a child's head, rising from the pelvic cavity and extending high up in the abdomen. It was as firm to the feel as a fibroid tumour, but smooth over all its surface; and on examination per anum, it could be discovered to be growing from the uterus. It grew rapidly in size, and soon rendered the child unable to go out or take any exercise. The functions of the intestinal canal became interfered with; pain to a very great degree came on, chiefly in the left side of the abdomen; the right leg became œdematous; and in less than six months from the time when he (*Dr A. R. S.*) first saw her, the little patient sank and died.

On dissection, about thirty-six hours after death, great decomposition had taken place. The thoracic organs, the liver, and the spleen were all healthy. The large intestines were greatly distended with feculent fluid and gas. The large tumour was found to be growing from the back wall of the uterus; quite soft behind and above. At its upper aspect it was adherent to the bowels; and there its peritoneal covering was perforated at the point where it was glued

to the ileum and sigmoid flexure of the colon. The walls of the uterus, the cavity of which was $2\frac{1}{2}$ inches in length, were of normal thickness in front and at the fundus; the back wall seemed to be all degenerated into the morbid mass, which, on section, presented a number of coagula in various parts. The kidneys were both slightly hydronephrotic.

SESSION XXI.—MEETING XI.

May 28, 1862.—Dr PATTISON, *President*, in the Chair.

I. GALVANISM IN EFFECTING PREMATURE LABOUR.

Dr Berryman gave the history of a case of induction of premature labour, where he had recently made use of the electro-magnetic battery for the purpose of calling into action the muscular powers of the uterus. The patient had a contracted pelvis, and though she had passed through several labours only two of her children had lived; one which, as the result of an accident, had been born prematurely, and another which had been delivered by Dr Alex. Simpson, by podalic version. On the present occasion, when she had arrived at the end of the eighth month of pregnancy, Dr Alex. Simpson had attempted to induce premature labour, by passing a sound into the uterus for about eight inches, and moving it so as to separate the membranes slightly from the inner surface. No result having followed in two days a flexible male catheter was introduced and allowed to lie for upwards of an hour. The patient then had a slight threatening of pain, but regular contractions did not set in. For some days the os uteri became more and more relaxed and dilatable, so that the membranes protruded somewhat; but as no regular and effective pains were coming on in five days, he (Dr B.) passed an electric current through the uterus, introducing one pole of the electro-magnetic battery into the vagina, and applying the other over the abdomen. Immediately after the first application a regular uterine contraction set in, and the instrument was removed. The pains not recurring after some time, it was again applied, and again a contraction was induced. The regular pains then set in, and the labour was easily and naturally terminated with the birth of a living child.

Dr Alexander Simpson observed that the capability of galvanism in inducing contractions in the uterine fibres was remarkable in the case just described, and all the more because, as was well known, the carefully conducted experiments of Drs Simpson and Martin Barry seemed to prove that galvanism had no power to excite contractions of the uterine fibres. Dr Berryman's case could not of course be regarded as furnishing conclusive evidence as to the influence of galvanism in giving rise to uterine contractions, inasmuch as his case was a solitary one, and was opposed in its results to the experiments of Drs Simpson and Martin Barry already mentioned; but at all events Dr Berryman's case showed that galvanism might, under some circumstances, bring on labour, and the question came to be, whether labour might not be brought on oftener by this means than was hitherto thought possible.

Dr Peter Young said that the influence of galvanism in inducing contractions of the uterus would appear to depend very much on the particular condition of the organ at the time at which the galvanism was applied. It was well known that when the pneumogastric nerves were stimulated by galvanism, so as to endeavour to excite contractions in the walls of the stomach, no such contractions took place when the latter organ was empty and in a quiescent condition; but when the stomach was filled with food, and its nerves, fibres, and ganglia in a state of excitement, vigorous contractions of the muscular coat of the stomach were observable when the pneumogastric nerves were galvanized. This fact would perhaps explain in some degree the contrary results obtained by different observers in using galvanism as an excitant of involuntary muscular fibre. In Dr Berryman's case the uterine fibres, as shown by the open condition of the os, were obviously in a condition favourable to the reception of the galvanic stimulus, and contracted accordingly; while, if the uterus had not been

previously excited by the presence of the catheter, it is probable that either no contractions would have succeeded the application of the galvanism, or at least the contractions would not have taken place so readily and so soon.

Dr Cochrane thought that galvanism might be useful in inducing uterine contractions in cases of abortion, where the introduction of the hand into the uterus was difficult and attended with considerable pain to the patient.

Dr Keiller remarked that the great objection to using galvanism in cases of abortion was that the uterine fibres were not sufficiently developed to respond to the stimulus. He (*Dr K.*) remembered when *Drs Simpson and Martin Barry* made very careful experiments with the view of determining whether galvanism had any power in bringing on uterine contractions. They used the apparatus of *Radford*, as it was he who first asserted that galvanism was able to excite uterine contractions, and applied one of the handles to the vagina and the other to the abdomen. They tried the galvanism both before and after the commencement of labour, and although the patient complained much of a disagreeable feeling, little or no influence was observed to be exerted by the galvanism in exciting uterine contractions.

Dr Cochrane sometimes employed galvanism successfully in bringing on the catamenia, and *Dr Peter Young* had seen galvanism of use in cases of obstinate constipation.

II. ABNORMAL POST-PARTUM CONVALESCENCE.

Dr Bruce read the following notes:—*Mrs S.* was attended by me on the 31st May last in her third confinement, the two previous ones having been quite natural. This one also presented no unusual character. It was a little tedious, and ergot had no effect in accelerating it. Nothing unusual occurred during the first few days after delivery. 6th June.—Early this morning she took a weed, and was very feverish through the day; less so on the 7th, and nearly well on the 8th. Not having slept for two nights, I directed that she should get a morphia draught at night. Accordingly they gave her 30 min. sol. of morphia, which seemed to have the effect of exciting her a good deal. In an hour after they gave her other 15 min., but without any soothing effect. On the contrary she got much worse, and in fact became completely maniacal, talking nonsense, tossing about the bed, tearing down the curtains, and attempting to bite those around who were endeavouring to restrain her.

It was while in this condition that I was sent for through the night to see her. She knew me quite well, but attempted to draw my hand to her mouth to bite it. She was very hot and perspiring. I ordered her half a teaspoonful vin. antimon., and to be repeated every hour if required. 9th.—The antimonial had an excellent effect;—she fell asleep soon after the first dose, and did not awake for about two hours. Another smaller dose was then given, and she again fell asleep for an hour or two and awoke quite rational. 10th.—Continues quite sensible, but with a pulse about 130, and she feels very sore; no doubt after the severe exertion of the previous morning. 11th.—She became very feverish last night, so much so that her friends were induced to cut off her back hair. She complained very much of a choking sensation, and to-day is still very feverish. She was very unwell all day, and in the evening was affected with nervous choking sensations and with faintings.—R. Tr. valer. am., a teaspoonful to be given occasionally. 12th.—To-day she is not at all well, she appears to be very nervous and can scarcely speak. Says she cannot hear the ticking of the clock; and sometimes becomes almost unconscious. She perspires greatly, pulse is 140. The bowels were freely moved, and a large quantity of very offensive fæces were expelled. Temporary benefit seemed to be derived from the valerian. Tongue tremulous and of a white appearance. Altogether her condition seems to be becoming serious. Sack whey was given, of which she seemed very fond, and would have taken any quantity. By the evening her condition seemed to be somewhat improved, but the pulse is still rapid (130). She is not so greedy upon the sack whey. The bowels having shown a tendency to be too much relaxed, an astrigent draught was given

with good effect. A sedative and stimulant mixture was now prescribed, to be given at regular intervals. 13th.—Fell asleep after the first dose of the mixture and awoke some hours after, but in a little fell asleep again. In the morning said she had a fine sleep and felt quite another creature; and now she takes an interest in things, and asked about her baby for the first time since taking the weed, a week previously. The pulse is still 130, but her appearance shows that she is decidedly better; she has also taken some nourishing food as well as drink. She is quite calm and collected, and is still inclined to sleep. 14th.—Keeping better; pulse 130 and regular. The tongue is coated. She feels well and is evidently improving. 15th.—Continuing to improve; pulse 112; tongue cleaning. She still takes nervous turns and heats. 16th.—Had a bad night. Broke out into great perspiration, and the skin was cold and clammy. There were twitchings of the muscles of the face, and she had fainting turns. She fell asleep afterwards for some hours and awoke much better, pulse under 100; has some appetite. 17th.—Took another turn yesterday afternoon; she became partially convulsed; the twitchings of the face were stronger than before. She afterwards fell asleep, breathing heavily, and continued to sleep most of the evening and night. Early in the morning of the 17th it was observed that she had lost the power of the left leg and arm, and that she could not speak properly or open her eyes,—in fact that she had had an apoplectic seizure.

On visiting her in the forenoon I found her to be much in the above condition. There was loss of sensibility in the limbs as well as loss of power. Her face was drawn to the right side. She opened her lids but with some effort, and she spoke imperfectly but rationally,—the pulse was natural. A smart purgative was ordered and light diet. 18th.—Much the same, but opens her eyelids without difficulty. The medicine acted freely. Her appetite is pretty good. 19th.—Much the same; gives no notice of evacuations. She talks a great deal, rationally, but evidently there is a weakness of the mind. 21st.—Much the same, and continued so for some days. 27th.—Has sensation in the arm now, but otherwise much the same. 29th.—Sometimes gives notice when about to micturate. 8th July.—Talks much more in her usual way now, but no other change. 16th.—Motor power has returned to some extent in the leg. September beginning.—Has been slowly improving, and can move through the house with a hold. She is able to be out of bed all day, but has still a peculiar manner and appearance. 17th.—Has been able to walk a few steps without a hold. 6th December.—While sitting talking was seized with a convulsion fit, and after coming out of it was unconscious for a good while and extremely restless. The same evening she was apparently quite in her usual again, but a weakness was left behind which lasted for several days. January 1862 (about the end of the month), she took another convulsion but slighter, and from which she did not recover so well. 15th February.—Much in her ordinary again, can move her arm, but not her fingers. 11th March.—Another convulsion occurred the same as before, and leaving the same effects. 2d May.—A repetition of the fit. Thus within five months four convulsive seizures have taken place; the second at about an interval of two months from the first, and the others successively at gradually decreasing intervals.

III. CASES OF ABNORMAL LABOUR.

Dr Pattison described some cases which had occurred in his private practice.

1. *Case of Paralysis of the Arm.*—In this case paralysis of the arm occurred immediately after labour. On examining it carefully, nothing abnormal could be detected. Patient would not allow blisters or galvanism to be applied; but by the use of stimulating embrocations and friction the paralysis gradually gave way, so that the arm has now nearly regained its original power. The paralysis lasted about two months.

2. *Abnormal Presentation.*—The patient was seized with bronchitis, and labour supervened. On examination the os was dilated, but although the parts were well formed, no presentation could be felt in any position. Accordingly he (Dr P.) determined to pass his hand into the uterus and rupture the mem-

branes; the hands were now found to present. He (Dr P.) then got hold of a foot, turned, and extracted. It was her sixth child. Ten days afterwards she was seized with shivering, which was removed by the administration of Dover's powder. The shivering recurred several times; but by the free use of brandy, wine, and full diet, she is now recovering rapidly.

3. *Case of Abnormal Presentation.*—In this case labour had continued five days. On examination a foot and hand were found presenting. He (Dr P.) readily got hold of the foot, turned, and delivered.

4. *Case of Fatal Vomiting after Delivery.*—In drawing the attention of the Society to this case, said Dr Pattison, I find from my notes in reference to the case of Mrs P., that everything was quite natural: child was her second, a boy, born fully a month before his time. Vomiting occurred in the latter end of second stage. I thought very little of this at the time: there was no nausea. Dr Hamilton in his lectures, used to warn his pupils to be on their guard when vomiting did occur in the second stage. I gave her a stimulant after the case was over and left. I was told at my next visit, ten hours after, that she had vomited several times in the course of the morning. I put her on ice-water, and applied mustard sinapisms to the stomach with slight pressure. In the evening the vomiting still persisting, she had effervescing draughts, which only remained about three or four minutes. The patient was weak, and I ordered some beef-tea and brandy; pulse 96. She did not complain of any pain except an occasional after-pain, but of rare occurrence nor of any consequence. Ice stopped the vomiting for twelve hours. Her friends giving her some beef-tea, it returned. Ice had no effect; I then tried opium, chlorodyne, oxalate of cerium, turpentine sinapisms. Bowels opened twice by an enema, brandy and champagne, beef-tea injections, with brandy, opium, and wine, etc.; but all of no avail. Drs Keiller and Young saw the patient, when some calomel and opium pills were tried, and larger turpentine stupes applied. The lochia were natural; little or no milk. About eighteen hours before death, she said she felt a pain at the duodenum after the act of vomiting. In conclusion, no albumen was found in the urine; the pulse was under 100 till about twenty hours before death, when it rose to 120, 140, was weak, and latterly intermittent. She sunk in eighty-four hours after delivery, as I consider from pure exhaustion. Dr Sidey, jun., has since mentioned to me that vomiting with no nausea generally terminates in a fatal issue. I trust he will favour the Society with his observations regarding this.

Dr Keiller remarked, that when he saw the last case referred to, along with Dr Pattison, the patient was in a state of collapse, not unlike that resulting from poisoning; and, although there was no reason to suspect any other than a puerperal cause of death, regretted that no *sectio* was obtained.

SESSION XXI.—MEETING XII.

June 11, 1862.—Dr PATTISON, *President*, in the Chair.

I. NOTES ON INDUCTION OF PREMATURE LABOUR.

Dr Sidey read some notes on induction of premature labour.

Dr Gordon doubted whether the presence of a large quantity of amniotic fluid prevented the occurrence of uterine pains, although it was well-known that accidental rupture of the membranes and consequent escape of the waters caused abortion.

Dr Keiller remarked that he concurred for the most part with the observations of Dr Sidey. You may separate the membranes for a considerable distance and open the os uteri fully without inducing labour, but by letting off the waters, particularly when the latter are present in large quantity, the upper part of the uterus is excited, and contractions ensue. Before puncturing the membranes, it was necessary, in order to induce uterine contractions quickly and with safety to the child, to prepare the uterus by dilating the os to a con-

siderable degree in addition to separating the membranes. In ordinary labour, puncturing the membranes and letting off the amniotic fluid was the proper practice in multiparous cases, where the uterus feels full, and where the pains are dilatory. Caution was required, however, in some cases, especially in primiparae, not to rupture the membranes until the os was fully dilated, as otherwise the child was apt to suffer. He (Dr K.) had, in corroboration of what Dr Sidey observed, seen cases where the uterus remained in a state of apparently complete inertia until the waters were let off, when contractions of the uterus immediately ensued. In a case of placenta prævia, accompanied with hæmorrhage, he (Dr K.) ruptured the membranes and turned, when the uterus immediately painlessly contracted. When the waters are small in quantity, when they are allowed to dribble away, the uterine contractions are not induced so certainly if at all. The state of the bag would show whether a large quantity of waters was present or not. In all labours it was, as was well-known, of great importance to keep the bag of membranes entire until the os was expanded; and with this object in view as well as to induce uterine contractions by letting off the waters, Dr Ramsbotham introduced a catheter and ruptured the membranes high up. He (Dr K.) preferred opening up the os uteri and passages by means of the caoutchouc bag or dilator, which he had introduced as a simple and most efficient means of inducing labour.

Dr Bruce remarked that rupturing the membranes at the full time sometimes produced contractions and sometimes not. In those cases where the waters were small in quantity, rupturing the membranes had often no influence in accelerating the pains, while, when the waters were large in quantity, the good effects were well-marked.

Dr Pattison said that *Dr Thatcher* had seen the membranes ruptured three weeks before labour supervened.

Dr Wilson had seen similar cases.

II. PLACENTAL PECULIARITIES.

Dr Keiller exhibited a number of abnormal placenta. At last meeting he had shown a peculiarly shaped double placenta, and now brought it forward a second time along with other abnormal placenta which had come into his possession since. The two placenta formed one mass, there being a scarcely appreciable line of demarcation between them. The placenta was battledore, the cords being attached at opposite sides. At first he (Dr Keiller) thought that the twins were enclosed in one common sac, but on careful examination he found that a delicate partition existed, formed by the amnion. It sometimes happened, although rarely, that twins were enclosed in one sac. In removing the placenta, one of the cords was nearly torn across, and some hæmorrhage took place. 2d, This placenta presented some very remarkable peculiarities. It was a case of placenta prævia. At the edge of the placenta the cord divides into two parts, one of which, the smaller, runs towards the centre and disappears. The other and larger division instead of entering the placenta at once, proceeds at right angles along the membranes. Of this division one large vein divides into two branches, one turns back, and enters the placenta near the same spot as the primary division, while the remaining branch proceeds and enters the placenta along with the remaining portion of the secondary division, and opposite to the point of entrance of the primary division. 3d, This placenta was also a battledore. The cord splits up into several branches on the membranes at some distance from the edge of the placenta. In these cases the cord is apt to tear across during extraction of the after-birth, so that caution is requisite in exerting traction on it. 4th, Dr K. showed three other placenta exhibiting different grades of the battledore variety, one of which had a knot on the cord.

Dr Thomas Balfour had had a placenta divided into two lobes with firm intervening membrane, just as in a case of twins. There was but one cord.

Dr Gordon remarked that such cases were of importance in practice, inasmuch as when portions of the placenta were connected to the general mass

only by the membranes, they were apt to be left behind, and to give rise subsequently to inconvenience.

Dr Wilson had lately seen such a case, where, owing to the retention of a portion of the placenta, a little hæmorrhage occurred.

Dr Pattison had a case where the membranes were expelled a month subsequent to labour, without any bad consequences resulting from their long retention.

III. DIPHTHERIA.

A discussion then ensued on diphtheria, in which Drs Pattison, Ziegler, Wilson, Stephenson, and other Fellows, took part.

CASE OF RAPE DURING SLEEP.

Reported by HUGH COWAN, Esq., Advocate.

THE following case, tried at Dumfries Circuit, on 26th September 1862, before the Hon. Lords Cowan and Neaves, throws light upon a vexed question of medical jurisprudence, Whether it be possible to commit rape upon a woman while asleep? The question has of late received much attention in Scotland, and was very fully discussed in the case of Charles Sweeney, a report of which will be found in Irvine's Justiciary Reports, vol. iii. p. 109. It was there decided by a majority of the whole Court, that the crime of wickedly and feloniously having connexion with a woman while asleep was not indictable under the name of rape, inasmuch as, apart from the force implied in the act of connexion, there was no force used to overcome the will of the woman. But the judges held that however improbable it might be, yet it was quite possible that a man might have connexion with a woman while asleep, and that according to the law of Scotland such a charge was a relevant article of dittay. In the present case, the crime was found to have been completed, and the prisoner received sentence accordingly. The particular circumstances which favoured the commission of the crime in this case were that the victim was a married woman, and that owing to great fatigue and want of sleep for some time previous, she had fallen into a more profound sleep than was natural.

The prisoner, William M'Ewan or Palmer, was placed at the bar charged with the crime of wickedly and feloniously having carnal knowledge of a woman when asleep, and without her consent, by a man not her husband.

The prisoner pled not guilty, and was defended by Mr Charles Scott, advocate. The following is the material part of the evidence led, the names being for obvious reasons suppressed.

Mrs M——. I have been married for sixteen years, and have three of a family. My husband keeps an hotel, of which he is also proprietor. He has been there for eight years. On entering the house there is a lobby, and on the left is the kitchen. There is an entrance from the kitchen to my private room, and close to that door there is the door from my room into the bar. There is a door from the bar into the lobby, which is open only during the day. My husband and I sleep in the private room, also two of our children—one in my own bed, and the other in a small folding-down bed. This small bed is near the fireplace, where there is a gas bracket. The prisoner has been eight or nine years in our service as horsekeeper and ostler,—he did not sleep in the house, but slept out.

On the night of 2d May last, a policeman drove to the door with a prisoner about half past ten or eleven o'clock. I was told that he had gone to the prison with the prisoner and was coming back. The servants were all to bed,

—they sleep up stairs. It was arranged that I was to wait up for the constable. I went into my own room, and lay down upon the little bed near the fireplace. I had been up all night on the previous night, and had been much fatigued during the week before. My husband was at this time sitting at the fire reading the papers. He was to go to bed after he was done with the papers. I fell asleep, and was very sound asleep. I lay down with all my clothes on. I was dressed much the same as usual,—lay down on my left side. The door was on my right. The little bed was at the other end of the room from the door into the kitchen. I felt the pressure of a man, and thinking it was my husband, I raised myself up. It was that blackguard,—I mean the prisoner. He was lying upon me, and when I rose up he drew himself away. My clothes I found folded up, and the lower part of my person was exposed. It was his weight that awoke me. He withdrew himself when I awoke. I was then lying more upon my back. When I awoke, his body was in contact with my person. His private member was in my private parts. I felt him withdraw it from them. In doing so, I felt a discharge from him in my person, and all about on my clothes. The gas was at this time very low; when I lay down it was high. There was a complete mess on my clothes. I immediately called out for him to go away for a dirty, filthy, blackguard. As he went away, he was buttoning up the front part of his trousers. The prisoner said as he went away, to say nothing about it,—the policeman is waiting for his money—to cash this account for him. The police often, when they came late at night, got payment from me of their accounts, and I got payment afterwards from the authorities. I rose to my feet in a moment; prisoner went sideways towards the kitchen. My husband awoke. I still cried out to prisoner to go away. I told my husband about prisoner. He got up and had him taken away. I was greatly agitated. Husband got the constable to take prisoner in charge. The prisoner said, I've done it, and I'm sorry for it,—he was then in the kitchen. My husband went with the constable to take prisoner to prison. When he came back I told him everything. This was a little after twelve o'clock, about a half or three quarters of an hour after the prisoner did it. There was light enough to let me see prisoner. There is no doubt as to the man. The prisoner never before came into my room without knocking. I was on no terms of intimacy or particular acquaintance with him. The prisoner was rough and coarse in his language, but a good enough servant otherwise. He did all this without encouragement from me at any time, and entirely without my consent. When I went into my room to lie down, the prisoner was in the kitchen. I suffered from the effects of this for a long time. I was much distressed, and have been kept from sleeping by it. I might have slept for half or three quarters of an hour before it was done. When I lay down, my dress was quite in its proper state.

Cross-examined.—I had two female servants at that time,—the one of whom left me at Whitsunday. They had gone to bed before this happened. The prisoner was left in kitchen, and was to wait for the constable. The door from the bar into the lobby was locked, and to get into the bar at that time of night a person must go through my room. The small bed is about a foot from the ground. I might be a minute or two in falling asleep. I had on my usual clothes, petticoat, and crinoline. It might be three minutes after I called out before my husband awoke. It would be two minutes after I called out before I went to the door, and then husband got up. I did not tell the policeman about it till he came back from taking prisoner to the prison. I told him that the prisoner had been a filthy blackguard. The policeman came into the bar, before he went to the prison, and got his money. I went up stairs and told the servants. Next morning the superintendent of police came, and I told him. I did not show my clothes to the servants, nor to my husband, but sent them to be washed.

Robert M.—. I am landlord and proprietor of the — Hotel. My wife and I sleep in a room off the kitchen. The prisoner has been for eight or nine years in my service—always connected with the stables—never as a house-

servant. On the night of 2d May last, M'Millan the constable came to my house—a man Rae was driving him—this was about ten or eleven o'clock. The constable went to the office with his prisoner, and he was to come back to my house and then drive home. The prisoner was in kitchen with Rae when I went to bed, after eleven o'clock. Both the children were in bed. My wife had been very busy both that day and the day before. She lay down at my request on the small bed, and I sat reading. The small bed was about a couple of feet off the ground. Her dress was quite right, and she lay down on top of the bed with her clothes on. She fell asleep very soon. I sat reading for three quarters of an hour, and then undressed and went to bed. I turned down the gas. I was awoke by my wife ordering prisoner out of the house for a dirty blackguard, and got out of bed. The prisoner was in the act of going out of the room into the kitchen. My wife was very much excited. I jumped up and partially dressed and went into the kitchen. The prisoner had then gone out to the back yard. I got agitated, and saw something was wrong, but did not know to what extent. I followed the prisoner to the stable with the constable and driver. I asked prisoner what he had been doing. He said, I have done it, and can't help it, and I hope you'll forgive me. I said, You blackguard, I'll give you into the hands of the police. I gave him in charge, and went to the office with him. The constable got his money after he came back from the office. On the way to the office prisoner at different times spoke as before, and wished to be allowed to go away, saying he would appear next morning. I said, No; he was in the hands of the police. I was alone with the prisoner for a minute or two in the lock-up. He said the same words as before, adding that they couldn't give him more than seven years at all events. We left prisoner at the office. I went back with the constable. I found my wife agitated and weeping. She then told me that she was awoke by the prisoner, and that she saw him putting up his clothes. She showed me her underclothes, which were all wet. She said that when she awoke the prisoner was in the bed—that he was using indecent liberties with her—and that he was having connexion with her. I can't say that she said he had his will of her. After this, constable got his money and went away. The prisoner was not on such terms as to admit of his coming into the room without knocking. The underclothes which wife showed me were marked as if by a man having had connexion with her.

By the Court.—I am quite sure my wife was sound asleep when I went to bed.

The evidence of the constable, and of Rae the driver, was confirmatory of this,—their statement being substantially this, that after the return of the constable from the prison, they got the prisoner to get them a dram, which he did from the bar, going through the private room; that the constable then wanted cash for his account, which the prisoner said he would get him. That the prisoner then went into the private room, closing the door, and was absent for two or three minutes,—that they remarked upon his absence, and then they heard Mrs M—— calling out, as is detailed in her evidence.

In his declaration, the prisoner admitted having gone into the room, and having raised Mrs M.'s petticoats, and placed his hand upon her person, but denied anything further.

The jury unanimously found the prisoner guilty as libelled, and he received sentence of ten years' penal servitude.

REPORT ON GARIBALDI'S WOUND.

THE following is the recent report of Messrs Partridge and Pirogoff on Garibaldi's wound, dated Spezzia, Oct. 31 :—

"1. The articulation of the foot is opened by the ball on the internal side. 2. The two malleoles, together with the internal portion of the articulation, are tumefied. 3. As far as we can judge by external exploration, the ball will be found towards the external part of the articulation, fixed in the bone. 4. The

suppuration is sufficiently good, and not abundant. 5. The foot is slightly turned inwards. 6. The distance between the two malleoli is greater on the wounded side by an inch and a-quarter to an inch and a-half than on the uninjured side. 7. The exploration of the wound, either with the finger or with instruments, is only indispensable when the certainty is reached that the ball has become mobile, and has neared the surface; such exploration should be followed immediately by the extraction of the ball. 8. The general health of the patient is excellent. 9. The expectative method—*i.e.*, patience—is the one and only method to be followed in the present moment. It must be changed when the quality of the pus, the detachment of splinters, or the formation of an abscess prove the evident necessity of the extraction of the ball. 10. The method of dressing the wound by the acting doctors leaves nothing to be desired. 11. It is indispensable that the patient be kept in a spacious and well-aired chamber, and that he pass the winter in a warm and dry climate.”—*British Medical Journal*.

QUARTERLY RETURN OF BIRTHS, DEATHS, AND MARRIAGES.

THE present Report, in addition to the number of births, deaths, and marriages in each registration district, gives the corrected number of the population as ascertained at the census of 1861. The returns, for the quarter ending 30th September, indicate an increase in the proportion of births and deaths above the average of the corresponding quarters of the seven previous years, while the marriages, though above the mean of the corresponding quarters of the two previous years, were exactly the average of the seven previous years.

BIRTHS.

25,798 births were registered in Scotland during the third quarter of 1862, which gives the annual proportion for the quarter of 335 births in every ten thousand of the estimated population, or 1 birth to every 29 persons. The average of the corresponding quarter in the seven previous years was only 331 births to every ten thousand persons, so that the proportion during the quarter has been above the average. It is exactly the English proportion for the same quarter; but above the English average of the ten previous years, which was only 328 births in every ten thousand persons. Of the children born, 13,351 were boys, and 12,447 girls, being in the high proportion of 107·2 boys for every 100 girls.

The proportion of births in the town and country districts varied considerably. Thus in the 126 town districts (embracing almost all the towns with a population of 2000 and upwards), 14,393 births were registered; while in the 881 country districts (embracing the remainder of the population of Scotland), the births amounted to 11,405, thus indicating an annual proportion of 355 births to every ten thousand persons living in the town districts, but only 312 births to a like population in the country districts.

Of the 25,798 births, 23,261 were legitimate, and 2537 illegitimate, being in the proportion of one illegitimate in every 10·1 births, or 9·8 per cent. of the births illegitimate.

DEATHS.

14,227 deaths were registered in Scotland during the quarter ending 30th September, being in the annual proportion of 184 deaths in every ten thousand of the estimated population, or one death in every 54 persons. This is considerably above the mean proportion of the corresponding quarter in the seven previous years, which was only at the rate of 179 deaths in every ten thousand persons; and though exactly the English rate for the same quarter, is considerably below the mean English rate for the third quarter, which on a ten year's average, gives a proportion of 202 deaths for every ten thousand persons.

As usual, the deaths in the town districts greatly exceeded those in the country districts. Thus, in the 126 town districts, 8669 deaths were regis-

tered, but in the 881 country districts only 5558 deaths. This indicates an annual proportion of 214 deaths in every ten thousand persons living in the town districts; but only 152 deaths among a like population living in the country districts. These facts show the very much greater unhealthiness of a town residence, and demonstrate the necessity of using every available means for improving the healthiness of our town dwellings.

Of the deaths, 5182 were registered in July, 4466 in August, and 4579 in September: thus indicating 167 deaths daily over Scotland during July, 144 daily during August, and 152 daily during September.

INCREASE OF POPULATION.

As the births amounted to 25,798, and the deaths to 14,227, the natural increase of the population amounted to 11,571 persons. From this, however, have to be deducted the numbers which emigrated during the quarter. From a Return furnished to the Registrar-General by the Emigration Commissioners, it appears that, during the quarter ending 30th September 1862, 33,240 emigrants left the ports of Great Britain and Ireland, of whom 3827 were ascertained to have been of Scottish origin. If to that number 918 be added as the proportion of emigrants whose nationality was not ascertained, the total number of Scottish emigrants during the quarter would amount to 4745 persons, which number, deducted from the excess of births over deaths, would leave 6826 as the increase of the population during the quarter. This calculation, however, makes no allowance for the numbers who emigrate to England and Ireland.

MARRIAGES.

4558 marriages were registered in Scotland during the quarter ending 30th September, being in the annual proportion of 59 marriages in every ten thousand of the estimated population, or one marriage in every 168 persons. This is the average proportion of marriages for the corresponding quarter of the seven previous years, but is somewhat higher than that of the last two years; thus apparently indicating that the general prosperity of the country has not been seriously affected by the war between the Northern and Southern States of North America. The above proportion of marriages, however, is very much below the mean of England for the corresponding quarter, for an average of ten years shows 80 marriages in every ten thousand persons during the third quarter. This is a very remarkable fact, especially when it is considered that the number of legitimate births to the population is as high, if not higher, than in England; while the proportion of legitimate births to each marriage is much higher in Scotland than in England.

Of the above marriages, 3079 were registered in the 126 town districts, and only 1479 in the 881 country districts; thus indicating a proportion of 76 marriages in every ten thousand persons in the town districts, but only 40 marriages in a like population in the country districts.

Of the marriages, 1996 were registered in July, 1305 in August, and 1257 in September.

HEALTH OF THE POPULATION.

Since the beginning of the present year, a higher rate of mortality has prevailed over all Scotland than the average of the corresponding months in the seven preceding years; and the three months, July, August, and September are, in this respect, no improvement on those which preceded them.

This high mortality of the past quarter has not resulted from any increase in the prevalence and fatality of the usual autumnal bowel complaints; for these diseases have not manifested themselves in a greater degree than in the earlier months of the year. The usual cause, indeed, of such complaints, viz., high mean temperature, has been wanting. It is observed in this country that it is only when the mean temperature rises above 58° and approaches to 60°, that these bowel complaints become prevalent; and their fatality increases with the rise of mean temperature. But this year the mean monthly temperature of even July was only 53°·8; of August, 56°; and of September, 53°·4; and there has,

consequently, been nearly as great an absence of these complaints as in March, April, and May. The Notes which the Registrars have sent along with their returns, do not enlighten us as to the causes of the high mortality which has been observed; for there does not appear to be prevailing, in any district of Scotland, any malady producing mortality which would account for the fact. The high mortality, therefore, during the past and previous quarters of the year, must be attributed to the unfavourable effect which the damp, cold, rainy weather has had on all diseases, causing the general mortality to be increased.

Over the whole of Scotland, however, affections of the throat seem to have been on the increase; and the tendency of these to assume the diphtheritic form has been observed. It is a remarkable fact that diphtheria was first noticed in the epidemic form in Scotland in the year 1857, and has been on the increase ever since. It has been especially prevalent during the past quarter in the northern half of Scotland.

Among children, measles, but in a mild form, seems to have been the principal epidemic in the Northern Counties, and whooping-cough in the Midland Counties; while scarlatina appears to have prevailed more in the Counties adjacent to England.

WEATHER.

The quarter has been characterized by a low mean temperature, an unusual amount of wet, cloudy weather, a deficiency of sunshine, and excessive humidity of the air. July was unusually cold for the month, with an almost constant fall of rain, great humidity of the atmosphere, and an unusual prevalence of winds from the south, south-west, and west. August was scarcely any improvement on July, having been a gloomy, cloudy, rainy month, with an excessively moist atmosphere, very little sunshine, and a mean temperature considerably below the average. September was the only month when the weather could be said to be steady, dry, and fine. It was by far the most agreeable month of the three, and the only one which could be termed a dry month.

The mean barometric pressure, corrected and reduced to the sea-level, was 29·735 inches in July, 29·885 inches in August, and 29·979 inches in September. The mean temperature was 53°·8 in July, 56° in August, and 53°·4 in September, being a mean of 54°·4 for the quarter. The mean dew-point temperature was 48°·3 in July, 51°·4 in August, and 49°·5 in September. The degree of humidity of the atmosphere was 83 in July, 87 in August, and 88 in September; full saturation of the air with moisture being represented by 100. The absolute highest degree of temperature noted with the black bulb thermometer exposed to the sun, was 118° in July, 132° in August, and 138° in September. The absolute lowest degree of temperature noted in the black bulb thermometer exposed during the night was 22°·5 in July, 24° in August, and 18° in September. 9·66 inches of rain fell over Scotland during the quarter, as the mean of all the stations. Of that quantity, 3·87 inches fell during July, 3·35 inches during August, and 2·44 inches during September. The sun, on an average, shone 200 hours during July, 156 hours during August, and 157 hours during September. Winds with an easterly point blew 5 days in July, 8 days in August, and 9 days in September. Winds with a westerly point blew 21 days in July, 14 days in August, and 13 days in September.

GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

Minutes of Meeting, Tuesday, 28th Oct. 1862.

Mr GREEN, President, took the chair at one o'clock. All the members were present.

The minutes of the last meeting were read and confirmed.

The President made a statement of the object of this meeting of the General Medical Council.

The following documents were read:—

Resolutions passed by the Executive Committee, on the 11th July 1862.

"That while the Executive Committee earnestly desire to comply with the instructions of the General Medical Council, in reference to the publication of the 'British Pharmacopœia,' there nevertheless appear to be grave reasons for first considering more maturely the expediency of introducing, under the authority of the Medical Council, the proposed changes of the weights used in pharmacy throughout the empire.

"That it be accordingly proposed to the Pharmacopœia Committee to reconsider the matter; and that it be suggested that the Astronomer Royal, Sir John Herschel, and Professor Miller of Cambridge, Members of the Committee appointed to superintend the construction of the present national standards, should be invited by the President to favour the Committee with their opinions on the subject."

Resolutions passed by the Royal College of Physicians, London, on the 12th July 1862.

1. "It having come to the knowledge of this College that, in the new Pharmacopœia intended for publication, under the authority of the General Medical Council, it has been contemplated to introduce a new grain, differing from the standard grain weight of the country, the College is of opinion that, however desirable it may be to substitute the avoirdupois pound for the troy pound, it is *not* desirable to introduce a new grain differing from the standard grain, which has been so long in general use, and is established by Act of Parliament."

2. "That Dr Burrows, as representative of the College in the General Medical Council, be requested to communicate the resolution to the Executive Committee of the Medical Council."

(Signed)

HENRY A. PITMAN, Registrar.

Letter addressed to Dr Garrod, Secretary to the Pharmacopœia Committee, by Dr Christison.

"To Dr Garrod, Secretary of the Pharmacopœia Committee.

"Edinburgh, 18th July 1862.

"Sir,—There has been laid this day before the Edinburgh Branch of the Committee for preparing and publishing the 'British Pharmacopœia,' resolutions of the 11th instant, by the Executive Committee of the General Medical Council, relative to the changes proposed by the Pharmacopœia Committee in the weights of Pharmacy. The Edinburgh Sub-Committee instruct me to transmit to you, as Secretary of the whole Committee, the views which have occurred to them on this subject.

"The Sub-Committee submit, with great deference, that the Executive Committee of the Council appear to them to have gone beyond their province in entertaining criticisms as to the construction of the Pharmacopœia which has been prepared by the Pharmacopœia Committee, and adopted as the 'British Pharmacopœia' by resolution of the General Council itself of May 21, 1862. The duty of the Executive Committee, as this Sub-Committee understands the powers delegated by the minute of Council of the same date, is limited to taking all such steps as may be necessary for the publication of the 'British Pharmacopœia,' and does not extend to controlling the Pharmacopœia Committee in the construction of it, or to altering the Pharmacopœia, which has been sanctioned by the General Council. Had the Executive Committee, therefore, simply remitted the letters of Dr Paget and Mr de Morgan to the Pharmacopœia Committee, they would have done, as this Sub-Committee think, all they could correctly do with the subject of these letters, and such an answer would have been given by the Pharmacopœia Committee as would have probably been satisfactory to all parties.

"With this preface, the Sub-Committee beg to remind their brethren of the conjunct Committee that the proposed change in the Pharmacopœia weights was carefully considered by three Sub-Committees, each consisting of five members, at least, and in each of which the three branches of Medicine—Physic,

Surgery, and Pharmacy—were represented; that it was subsequently considered at a conference of three delegates from each Sub-Committee in May 1859; that at first prejudices were naturally found to exist against the change; that the same objections now urged by Dr Paget were at that time brought forward, with others at least as important; but that, in the end, all the members of the conference agreed that the change should be adopted.

“In the Pharmacopœia Committee there was no want of members amply competent to deal with the scientific, no less than the practical bearings of the subject, and aware of the importance of not losing sight of science while dealing with practice. This Sub-Committee therefore do not see the necessity or the propriety of appealing to the opinions of the scientific gentlemen whom the Executive Committee suggest as persons to whom the subject should be referred. The Sub-Committee have, one and all, the highest respect for the eminent men of science who have been named, but they submit, that, as to a question of mingled science and practice, and one much more of practice than of science, the Pharmacopœia Committee do not need to refer to any scientific men; and that if they are not themselves more competent to settle such a question than any mere scientific committee, they ought never to have been appointed, as assuredly they never would have consented, to undertake the duty intrusted to them.

“The objectors to the proposed changes in pharmacæutic weights appear to have lost sight of the fact, that the Pharmacopœia Committee had to deal,—1. With an already existing serious, and practically inconvenient, deviation of the weights and measures of pharmacy from those of the imperial standard; 2. With a difference between the pharmacæutic weights of the three existing Pharmacopœias of the United Kingdom; 3. With a want of conformity between the weights and the measures in each of the three Pharmacopœias; and, 4. With the long-established adoption in pharmacy of a fluid-grain (minim) differing from the weight-grain, but exactly corresponding with the new pharmacæutic grain.

“All these discordances the Committee, after long and careful consideration, saw that they could easily remove, so far as practice was concerned, without injury, and with no more than a merely temporary inconvenience, by the slight and simple alteration which has been adopted. In particular, while they have established a slight difference between pharmacy and other trades in the value of the grain, they have introduced for the first time a conformity in that of the ounce and pound. This must be admitted to be an important object, because the pound and ounce are much in use in the various trades which come in contact with that of pharmacy; but, on the other hand, as the grain is very little used in the relations existing between pharmacy and other trades, a slight alteration in its pharmacæutic value cannot occasion serious inconvenience.

“The Edinburgh Sub-Committee beg to repeat, in terms of the Report of the united Committee, which was adopted by the General Medical Council on the 21st of last May, that in the new Pharmacopœia care has been taken to alter the formulæ of the old Pharmacopœias, so that the doses of active substances shall not be altered, so far as the change in pharmacæutic weights is concerned. They are further satisfied, that any accidental error during the period of passage from the old to the new grain, will not be of the slightest signification as to the action of even the most powerful remedies. And they have to add, that they have received the testimony of the ablest judges in the department of pharmacy, that the proposed system of pharmacæutic weights and measures, including the change of value of the grain, will be found very soon to be a great benefit to the pharmacæutic chemist.

“With these advantages in prospect, the Edinburgh Sub-Committee are not deterred by the objection that science will be slighted by the proposed change. They are inclined to think that science has really little to boast of hitherto in the organization of imperial weights and measures of the United Kingdom, and very little to suffer through any partial deviation from them. At any rate, they are unable to see how the change in value of the grain in the trade of pharmacy disregards or injures science in any respect.

"In point of fact, the Pharmacopœia Committee did not adopt the system of weights and measures, which has since received also the sanction of the General Medical Council, without having seriously considered the propriety of throwing aside the imperial system altogether, and introducing a really scientific one—a decimal system. Two courses were open to them:—either to follow some continental countries, which have adopted the French metrical system, or to create one more consonant with British ideas, and practically more convenient, by arbitrarily erecting, as Dr Paget has since proposed, a simple decimal system, founded on the imperial grain as unit. But the Committee came to the conclusion that either of these changes would be too wide a deviation from the general system of weights and measures of the country for the General Medical Council to be the first to introduce them; 'and, on the whole, that the Legislature, and not the Council, should take the lead in this matter.'—(*Pharmacopœia Report of the General Medical Council, 21st May 1862.*)

"The Edinburgh Sub-Committee will hail with pleasure the occasion when men of science will persuade trade, commerce, and Government that a decimal system of weights and measures is the most truly scientific of all, as well as the most facile in practice. So far as pharmacy and medical practice are concerned, men of science will meet with no opposition to a really scientific system such as that; and no new obstacle will be created by the system which has been adopted in the meantime for Pharmacy by the Pharmacopœia Committee and the General Medical Council, *as the only eligible mode of reconciling real existing discrepancies, and getting rid of actual serious inconvenience.*—I am, your most obedient servant,
R. CHRISTISON."

Resolution of the Dublin Pharmacopœia Sub-Committee.

"That this Sub-Committee fully agrees in opinion with the Edinburgh Sub-Committee that the Executive Committee of the General Medical Council has exceeded the powers intrusted to it by the General Medical Council, in passing the resolutions relative to the proposed change in the weights in the 'British Pharmacopœia,' on the 11th of July 1862, and that this Committee fully adopts the letter of Dr Christison to Dr Garrod, of the 18th of July 1862, which has this day been laid before the Sub-Committee."

Resolution of the London Pharmacopœia Sub-Committee, 14th August 1862, on the resolution of the Executive Committee of the General Medical Council, 11th July 1862.

"The London Branch Pharmacopœia Committee is of opinion, that as the manuscript of the 'British Pharmacopœia,' with the proposed weights and measures, has already received the sanction of the General Medical Council, it is not at liberty to reconsider the question of the weights, for the purpose of making any fundamental alterations therein, unless empowered to do so by the General Council."

The following memorials on the subject of weights and measures were read:—

"119 George Street, Edinburgh, 24th October 1862.

"To Dr HAWKINS, Secretary to the Medical Council, London.

"Sir,—I beg respectfully to hand you copy of resolution, carried by a majority of eight to one, at a meeting of the Council of the Pharmaceutical Society, held here on Wednesday, 22d current, at which the above subject was fully discussed.—I remain, your obedient servant,

"JOHN MACKAY, Secretary.

"That, as the United Committee have already decided that the new Pharmacopœia be published, substituting the avoirdupois weight as a standard, instead of the troy, the Council much desire that this should be adhered to, and that, in the meantime, until a decimal system be decided upon for the country at large by Government, no change to the metrical form be made."

"Royal College of Physicians, Edinburgh, 25th October 1862.

"Sir,—At a meeting of the College held this day, the enclosed resolutions, in reference to the proposed change in the system of weights and measures, were unanimously agreed to. I am instructed by the College to forward to you a copy of these resolutions, in order that they may be laid before the approaching meeting of the Medical Council.—I have the honour to be, Sir, your most obedient servant,

D. R. HALDANE, *Hon. Sec.*

"Dr Hawkins, Registrar."

"Royal College of Physicians, Edinburgh, 25th October 1862.

"The Royal College of Physicians of Edinburgh having taken into consideration the proposed change in the system of weights and measures, resolves,—

1. "That the existing system is so faulty and unsatisfactory, that some change is required in it.

2. "That the change suggested in the Report of the Pharmacopœia Committee appears to the College to be an improvement.

3. "That the metrical decimal system having been recommended by a Committee of the House of Commons, it appears to the College that it would be well were the Medical Council at once to take the lead in inaugurating the decimal system, by introducing it into the New Pharmacopœia.

4. "That the representative of the College in the Medical Council be requested to support the foregoing resolutions in his place in the Medical Council."

"St Owen Street, Herford, 21st October.

"Dear Sir,—The resolution on the other side was passed at a large and important meeting of the profession, held at our county hospital a few days ago.

"Will you kindly submit it to the consideration of the Medical Council?"

"Yours truly,

J. GRIFFITH MORRIS, *Secretary.*

"Dr Hawkins Registrar."

"In the opinion of this Association, it is very undesirable to alter the present weights used in medicine, unless for the purpose of introducing a decimal system."

Resolutions of the London Pharmacopœia Sub-Committee on the subject of Weights and Measures, 25th October 1862.

"1. The London Sub-Committee is willing to relinquish the new (proposed) grain.

"2. The London Sub-Committee thinks it premature to adopt the metrical system of weights and measures, as it has not yet been sanctioned by the Legislature.

"3. As some decimal system will probably ere long be adopted by the Legislature, the London Sub-Committee does not think it advisable to introduce any new system of weights and measures at the present time.

"4. Considering that two of the three national Pharmacopœias employ the Apothecaries' (Troy) Weight, the London Sub-Committee is of opinion that that system should be ordered to be used in the 'British Pharmacopœia.'

"5. The alteration of the weights from the Avoirdupois to the Apothecaries' Weights, will of necessity involve a very extensive revision of the manuscript of the 'British Pharmacopœia.'"

1. *Moved* by Mr Teale; *seconded* by Mr Syme, and agreed to,—"That so much of the Report of the Pharmacopœia Committee, which was presented to the General Council on the 14th of May, 1862, as relates to the system of weights and measures, be re-considered."

2. *Moved* by Dr Sharpey, and *seconded* by Dr Storrar:—"That the grain weight heretofore in use be adopted in the 'British Pharmacopœia.'"

Amendment *moved* by Dr Christison, and *seconded* by Dr Alexander Wood,—"That the Council adopt the French decimal system of weights and measures

as the basis for the standards of weights and measures of the 'British Pharmacopœia.'"—Amendment negatived.

The original motion was then put and carried.

The meeting having been adjourned, was resumed at seven P.M.

3. *Moved* by Dr Storrar, and *seconded* by Dr Corrigan,—“That the weights used in the 'British Pharmacopœia' be the imperial or avoirdupois pound, ounce, and grain; and that the terms 'drachm' and 'scruple,' as designating specific weights, be discontinued.”

Amendment *moved* by Dr Acland, and *seconded* by Dr Stokes,—“That all weights below the avoirdupois pound, excepting grains, or multiples, or parts of grains, be omitted from the 'British Pharmacopœia,' whereby the grain weights in use may be uniformly divided or multiplied, duodecimally or decimally, and the inconvenient division of the avoirdupois ounce into 437·5 grains and its subdivisions will be avoided.”—Amendment negatived.

The original motion was then put and carried.

4. *Moved* by Dr Andrew Wood, and *seconded* by Mr Syme,—“That it be referred to the Executive Committee, in conjunction with a Committee consisting of one member elected by each branch of the Pharmacopœia Committee, together with Dr Garrod, the Secretary of the Pharmacopœia, to carry out forthwith the printing and publishing of the 'British Pharmacopœia.'”

Amendment *moved* by Mr Arnott, and *seconded* by Dr Alexander Wood,—“That it be remitted to the Pharmacopœia Committee to proceed with the preparation of the Pharmacopœia, in conformity with the resolutions of the Council of this day's date, relative to pharmaceutical weights.”

“That the editing of the Pharmacopœia be committed to one member elected by each Sub-Committee.”

“That the publication and sale of the Pharmacopœia be transferred to the Executive Committee.”

The amendment was carried.

5. *Moved* by Dr Corrigan, *seconded* by Sir Charles Hastings, and agreed to,—“That the Executive Committee appointed on the 21st May 1862, viz. :—The President, Dr Burrows, Mr Arnott, Dr Acland, Dr Sharpey, be, and are hereby appointed with the powers delegated to them at the meeting of the General Council of said date, and the powers given to them by resolution of this day.”

6. *Moved* by Dr Stokes, and *seconded* by Mr Teale,—“That this Council desire to record their sense of the heavy loss sustained by Science, by the profession of Medicine, and by the nation, in the death of Sir Benjamin Collins Brodie, Bart., the first and chosen President of the General Council of Medical Education and Registration.”

The motion was carried unanimously, and ordered to be communicated to the family of Sir Benjamin Brodie.

Mr Green, President, took the chair at 10 o'clock P.M., when the minutes of the last meeting were read and confirmed.

UNIVERSITY OF EDINBURGH.

THE winter session of the University of Edinburgh was publicly opened on Monday the 3d November, by the delivery of an introductory address by Principal Sir David Brewster, in the Chemistry Class-Room, which was crowded long before the appointed hour. The learned Principal, after alluding to some of the most interesting topics of the day, referred to recent important alterations in the curriculum of study of the University. These consist in the revival of the chair of Public Law, in the restriction of the lectures on Universal History to the subject of “Constitutional Law and Constitutional History,” to the establishment of a new professorship of the Sanskrit language, and to the addition of summer courses to the chair of Civil and Scots Law. In conclusion, Sir David Brewster referred to the losses sustained by the University during the past year, in the death of Dr Traill, and the resignation of Professor Campbell Swinton.

MEDICAL SCHOOL, SURGEONS' HALL.

THE Medical School, Surgeons' Hall, was publicly opened on the 4th of November, when an address was delivered by Dr Matthews Duncan. This address will be found at page 543 of the present number of this Journal.

THE LORD RECTORSHIP OF THE UNIVERSITY OF EDINBURGH.

THE election of a Lord Rector of the University for the next three years took place on the 15th of November. The polling, which began at ten o'clock, and terminated at twelve, took place in the various class-rooms of the College, and was superintended by the Professors. Towards the close of the poll, when it became known that Mr Gladstone had a large majority of votes in his favour, the supporters of both candidates became greatly excited, and a series of very warm encounters took place. The shouts and cheers of the Gladstonians seemed to rouse the ire of the Stirlingites, and large bodies of the opposing forces came into frequent collision at the northern entrance to the College, the possession of which was keenly disputed. From twelve o'clock, when the poll closed, up till nearly one, when the result was declared, the students collected in the Quadrangle, which was made the arena for the struggles of the two parties.

Shortly before one o'clock, the Professors appeared on one of the balconies, and a large board was suspended announcing the result of the election to be as follows:—

Mr Gladstone,	.	.	.	.	.	644
Mr Stirling,	.	.	.	.	.	468
Majority for Mr Gladstone,						176

GLASGOW UNIVERSITY—ELECTION OF LORD RECTOR.

ON the 15th of November, the election of Lord Rector took place within the College. The contest was of the most keen description. The Liberals nominated Lord Palmerston, and the Conservatives Lord Glencorse (the Lord Justice-Clerk.) The voting was brought to a close at twelve o'clock, when the following was the state of the poll:—

	Lord Palmerston.	Lord Jus.-Clerk.
Glottiana,	174	167
Loudoniana,	123	86
Rothseiana,	127	89
Transforthana,	132	132
	556	474

At one o'clock, Principal Barclay, accompanied by several of the Professors, proceeded to the Common Hall, and after he had read over the numbers, he declared Lord Palmerston duly elected.

FEMALE MEDICAL STUDENTS.

WE have more than once alluded to the case of Miss Garrett, a young lady desirous of entering the medical profession, who has applied to several licensing bodies for permission to enrol as a student of medicine. Having reason to believe that there would be fewer difficulties in the way of carrying out her intention at St Andrews than elsewhere, Miss Garrett proceeded thither at the opening of the present session, matriculated as a student of the University, and took out tickets for the classes of Anatomy and Chemistry. The Senatus, how-

ever, interfered, and enjoined the Professors of Anatomy and Chemistry to prevent her attendance until they had satisfied themselves as to the legality and competency of her doing so. A legal opinion was obtained on behalf of the University from the Solicitor-General (Mr Young), and Mr A. R. Clark, and this, it appears, was unfavourable to Miss Garrett's claim, as, on the 14th of November, the following resolutions were carried by a majority of the Senatus:—

"I. That the Senatus Academicus, acting under the clearly expressed opinion of their able counsel, hold the alleged matriculation of Miss Garrett to be null and of no effect.

"II. Seeing that it is incompetent to any professor to issue a ticket conferring academical privileges to a student not legally matriculated, the Senatus resolve that the tickets of the Anatomy and Chemistry classes issued to Miss Garrett are void and of no effect, and that the fees be returned."

Miss Garrett, on her part, laid a memorial narrating the facts before the Lord Advocate, whose opinion is as follows:—

"Edinburgh, 15th November 1862.

"If the only question involved in the memorial had related to the power of the Senatus Academicus to permit the attendance of female students on the lectures in the University on payment of the matriculation and class fees, I should have hesitated to say that such a course was not within the power of the Senatus Academicus had they thought fit to consent to it. The attendance of females on university lectures is by no means without precedent, and I find nothing in the charters or foundations of the University of St Andrews which can be construed to deprive the Senatus of the power to sanction such arrangements under such conditions and regulations as they might think reasonable. But the admission of female students with a view, and with the right of graduation, and the other privileges of the students in the University, is an innovation which the Senatus Academicus, in my opinion, have no power to permit.

"I do not think that in the present case the memorialist can maintain the right on the ground of special contract. The Senatus Academicus never officially gave consent to her admission, and it was not within the power of any individual professor to innovate on the established practice of the University without the authority of the governing body."

Miss Garrett may appeal to the University Court against the decision of the Senatus Academicus, and if that decision is confirmed she will be excluded from the college classes. As she does not care for damages, and has little prospect of being successful in an action for specific performance of the contract, there does not appear to be any practical solution of the female student question, except what may come from the University Commission, which exists until January, or from the legislature.

UNIVERSITY OF EDINBURGH—NUMBER OF STUDENTS.

THE number of students matriculated at this date (22d November) is 1400. They are distributed as follows among the different Faculties—Arts, 600; Medicine, 470; Law, 259; Divinity, 71. Last year, at the corresponding date, the total number of matriculated students was 1292; but as the Divinity students were not enrolled in the general album of the University, an addition of 71 must be added to the numbers of 1861, in order that a comparison may be instituted between the two years. The numbers for last year would then stand as follow:—Total number, 1363; Arts, 604; Medicine, 494; Law, 194; Divinity, 71. It will thus be seen that there is a falling off in the number of medical students to the amount of 24. We understand, however, that the number of first year's students is considerably larger than last year.

OPENING OF THE FACULTY OF MEDICINE, PARIS.

THE correspondent of the *Times*, writing from Paris on the 19th November, says,—“While stately senators and grave statesmen were enacting for the amusement of the guests at Compiègne humorous dramas, such as *La Corde Sensible* and *La Succession Bonnet*, another and a different sort of representation was going on in the lecture halls of the *Ecole de Medecine*. I need hardly tell you that the student class of Paris have ever been a demonstrative and not rarely a turbulent race. They have a high notion of the influence of their examples among the population of the Faubourg; and they have not forgotten their exploits this time last year when they hunted poor M. About from the playhouse, and almost hunted him from Paris; some, because of his publications against the Pope, and others, because they, perhaps wrongfully, suspected him of being by no means so liberal or so independent of court favour as he pretended. The students, who seem bent on reopening the campaign suspended last year, made a ‘demonstration’ on Monday against their new lecturer, Dr Rayer. On inquiring what was the cause of the hostility on the part of the students against their instructor—whether it was because he was unequal to his task, negligent of his duties, or discourteous towards his pupils—I was informed that, on the contrary, he was an excellent lecturer and an able practitioner, and, moreover, incapable of discourtesy. It appears there are two reasons for the ebullition of feeling of which he has been the object; the first is, he is one of the physicians in ordinary to the Emperor, and the second, that his appointment was considered by the students as an act of flagrant favouritism. Be this as it may, Dr Rayer proceeded to pronounce his opening address on Monday. The hall of the *Ecole de Medecine* was crowded from an early hour by students and others who went out of curiosity or for instruction. The moment the lecturer opened his lips, a storm of hisses and cries was raised, which drowned the applause of others who did their best to support him. The only words of the lecture heard was the opening sentence, *La solennité qui nous assemble*, but beyond this hardly a word could be caught during the confusion, even by persons close to him. The *Sergens de Ville* had to interfere; but their appearance did not at once calm the storm. The bust of the Emperor, which stood on a pedestal opposite the chair, was thrown down—a few say intentionally, others allege by accident, some one having moved a ladder which happened to be near it. The *Sergens de Ville* tried to lay hold of the rioters, and after much resistance on their part, succeeded in carrying off the ringleaders in custody, and tranquillity was restored.”

LEOPARDS AND SMALL-POX IN CEYLON.

LEOPARDS are strongly attracted by the peculiar odour which accompanies small-pox. The reluctance of the natives to submit themselves or their children to vaccination, exposes the island to frightful visitations of this disease; and in the villages in the interior it is usual on such occasions to erect huts in the jungle to serve as temporary hospitals. Towards these the leopards are certain to be allured; and the medical officers are obliged to resort to increased precautions in consequence. This fact is connected with a curious native superstition. Amongst the avenging scourges sent direct from the gods, the Singalese regard both the ravages of the leopard and the visitation of the small-pox. The latter they call *par excellence* “maha ledda,” “the great sickness;” they look upon it as a special manifestation of devidosay, “the displeasure of the gods;” and the attraction of the cheetahs to the bed of the sufferer they attribute to the same indignant agency. A few years ago, the capua, or demon priest of a “dewale,” at Oggalbodda, a village near Cattura, when suffering under small pox, was devoured by a cheetah, and his fate was regarded by those of an opposite faith as a special judgment from heaven. Such is the awe in-

spired by this belief in connexion with the small-pox, that a person afflicted with it is always approached as one in immediate communication with the deity; his attendants address him as "my lord," and "your lordship," and exhaust on him the whole series of honorific epithets in which their language abounds for approaching persons of the most exalted rank. At evening and morning, a lamp is lighted before him, and invoked with prayers to protect his family from the dire calamity which has befallen himself. And after his recovery, his former associates refrain from communication with him until a ceremony shall have been performed by the capua, called "awasara-pandema," or "the offering of lights for permission," the object of which is to entreat permission of the deity to regard him as freed from the divine displeasure, with liberty to his friends to renew their intercourse as before.—*Sir J. Emerson Tennent.*

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